

JUNE 20, 1960

# PURCHASING

The Methods and News Magazine for Industrial Buyers



● *The new N.A.P.A. Executive Committee, see page 65*

## **N. A. P. A. Convention Issue**

**A comprehensive report of  
N. A. P. A.'s 45th Annual Convention**

● *Start on page 70*



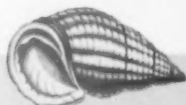
Wherever in the world your industrial machinery operates...



## Shell Alvania Grease is there

Other outstanding Shell Industrial Lubricants available world-wide

- Shell Tellus Oils—for hydraulic systems
- Shell Talona R Oil 40—anti-wear crankcase oil for diesel locomotives
- Shell Rimula Oils—for heavy-duty diesel engines
- Shell Turbo Oils—for utility, industrial and marine turbines
- Shell Dromus Oils—soluble cutting oils for high-production metalworking
- Shell Macoma Oils—for extreme pressure industrial gear lubrication
- Shell Voluta Oils—for high-speed quenching with maximum stability



**AN INTERESTING FACT!**  
Every Shell Branded Industrial Lubricant is named for a sea shell. Shown here is the Alvania beani.

Around the world, Shell Alvania Grease is available—under the same brand name and providing the same outstanding lubrication. This is assurance that your customers abroad will enjoy the same performance from your equipment that domestic customers rely upon.

Alvania® Grease offers these performance-proved advantages: (1) It provides safe lubrication at both high and low temperatures. (2) It won't wash out even in locations where water

splashing can't be avoided. (3) It has built-in protection against rust and pitting of anti-friction bearings. And because this *one* multi-purpose grease is specially designed to satisfy as much as 90% of industrial grease needs, less servicing time is required; inventory costs are less; and there is less risk of misapplication.

No matter where your machinery is shipped, make Shell Alvania Grease your standard recommendation. Write for complete information.

## SHELL OIL COMPANY

50 WEST 50TH STREET.....NEW YORK 20, N. Y.  
100 BUSH STREET.....SAN FRANCISCO 6, CALIFORNIA  
IN CANADA: SHELL OIL COMPANY OF CANADA, LIMITED  
505 UNIVERSITY AVENUE.....TORONTO 2, ONTARIO



For More Information Write No. 151 on Place Mark Card—Page 32

For More Information about ad on facing page  
Write No. 154 on Place Mark Card—pg. 32→





New Century Electric motor provides low-cost power for fans, blowers, pumps and compressors.

## New Century Electric part-winding motor gives extra smooth start

This new motor . . . at either 1200 or 1800 rpm's . . . will give smooth, cushion acceleration. No cogging, jerking or jarring equipment. Just dependable starting power with the same reduction in starting current of all Century Electric part-winding motors. A special winding scheme makes this extra smooth start possible.

**Applications**—Have an application where power company restrictions limit inrush current? The complete line of Century Electric part-winding start motors may be the answer. They provide the most economical and dependable way of starting equipment such as fans, blowers, centrifugal pumps and compressors, as well as reciprocating compressors with unloading valves.

**Reliable power**—High quality construction fea-

tures include . . . coils insulated with tough polyvinyl acetal resin . . . windings dipped and baked with several coats of high temperature synthetic varnish which protect against oil fumes, mild acids, dust and grit . . . rotors dynamically balanced so motors run smoothly and quietly . . . rugged cast iron frame for long life and low noise level. Century part-winding start motors are available in 20 to 150 hp sizes and in speeds of 1200 and 1800 rpm.

**Application aid**—A Century Electric application engineer will be glad to discuss your part-winding start problems with you. Century Electric also makes a complete line of motors . . . all sizes and types from 1/20 to 400 hp. For a copy of the new Century Electric Motor Application Guide, please write for bulletin 270A. For more than a motor . . .

**CENTURY ELECTRIC COMPANY**

St. Louis 3, Missouri Offices and Stock Points in Principal Cities

*Century*  
59-13





## *Tissue* was the issue... costs the consideration

"How can we maintain tissue quality and still cut down on tissue costs?" was the question at hand. The purchasing agent found the perfect solution. Fort Howard tissue, of course!

Made in twenty grades and folds, Fort Howard tissue meets the needs of every firm and factory, office, mill and institution. Helps maintain good-

will—yet saves on costs by enabling you to select the one that fits your requirements.

Check your tissue needs—then check the savings possible with a Fort Howard tissue. For complete information on all Fort Howard tissue and other Fort Howard paper products, call your Fort Howard Distributor. Or, write to:



### **Fort Howard Paper Company**

Green Bay, Wisconsin

Sales Offices in New York, Chicago, Los Angeles

America's Most Complete Line of Paper Towels, Tissues and Napkins



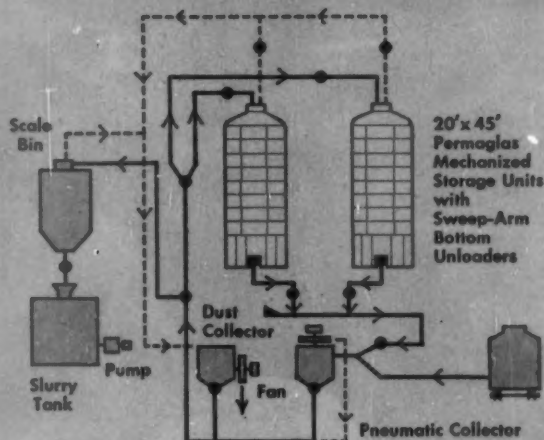
© Fort Howard Paper Company

For More Information Write No. 155 on Place Mark Card—Page 32





PERMAGLAS BULK STORAGE SYSTEM FOR WOOD FLOUR



Schematic diagram shows pneumatic-vacuum-pressure system for transporting bulk wood flour from railroad cars to two 20' x 45' Permaglas Mechanized Storage Units, with mechanical sweep-arm bottom unloaders reclaiming the material from storage to scale bins, and finally into process.

The Ruberoid Co., Joliet, Ill., reports:

## "Permaglas® Bulk Storage System paid for itself within 15 months"

The Joliet Illinois plant of the Ruberoid Co., one of the nation's leading manufacturers of dry-felt paper base for asphalt shingles and roofing paper, uses two 20'x45' *Permaglas* Mechanized Storage Structures with mechanical sweep-arm bottom unloaders which discharge tons of wood flour into processing—24 hours a day, 6-7 days a week. Capacity of each *Permaglas* Structure is approximately 100 tons.

Ruberoid reports A. O. Smith's exclusive mechanical sweep-arm bottom unloader made it possible for them to install a completely automatic system because it eliminated the problem of bridging and packing of the wood flour in storage.

This automatic *Permaglas* System paid for itself in 15 months through savings by purchasing wood flour in bulk-loaded boxcars instead of in bags, and in labor handling costs.

Now Ruberoid's Joliet plant enjoys these cost-saving advantages:

**SAVING** on production downtime because the mechanical sweep-arm bottom unloaders eliminated the problem of packing and bridging. They have been operating nearly continuously for almost 60 months without one penny for repairs.

**SAVING** on bulk wood flour purchases rather than in bags.

**SAVING** on labor costs. Savings on total manhours formerly required for handling and transporting of bagged wood flour to storage.

What's more, because of these savings, Ruberoid recently installed a 20'x50' *Permaglas* Structure at its Gloucester City, New Jersey plant, and a 17'x50' *Permaglas* Structure at its Kansas City, Missouri, plant.

*Permaglas* Storage Structures are glass-fused-to-steel construction both inside and out, assuring completely sanitary, easy-to-clean bulk materials handling systems. They safeguard your bulk materials from infestation. For more details mail coupon today.

Through research  ... a better way

**A.O. Smith**  
CORPORATION

HARVESTORE PRODUCTS DIVISION  
KANKAKEE, ILLINOIS  
A. O. Smith International S.A., Milwaukee 1, Wis.

A. O. SMITH CORPORATION  
Permaglas Storage Units, Dept. P-60  
Kankakee, Illinois

Send me free Permaglas Mechanized Storage Unit Bulletin MU-107.

Name.....

Title.....

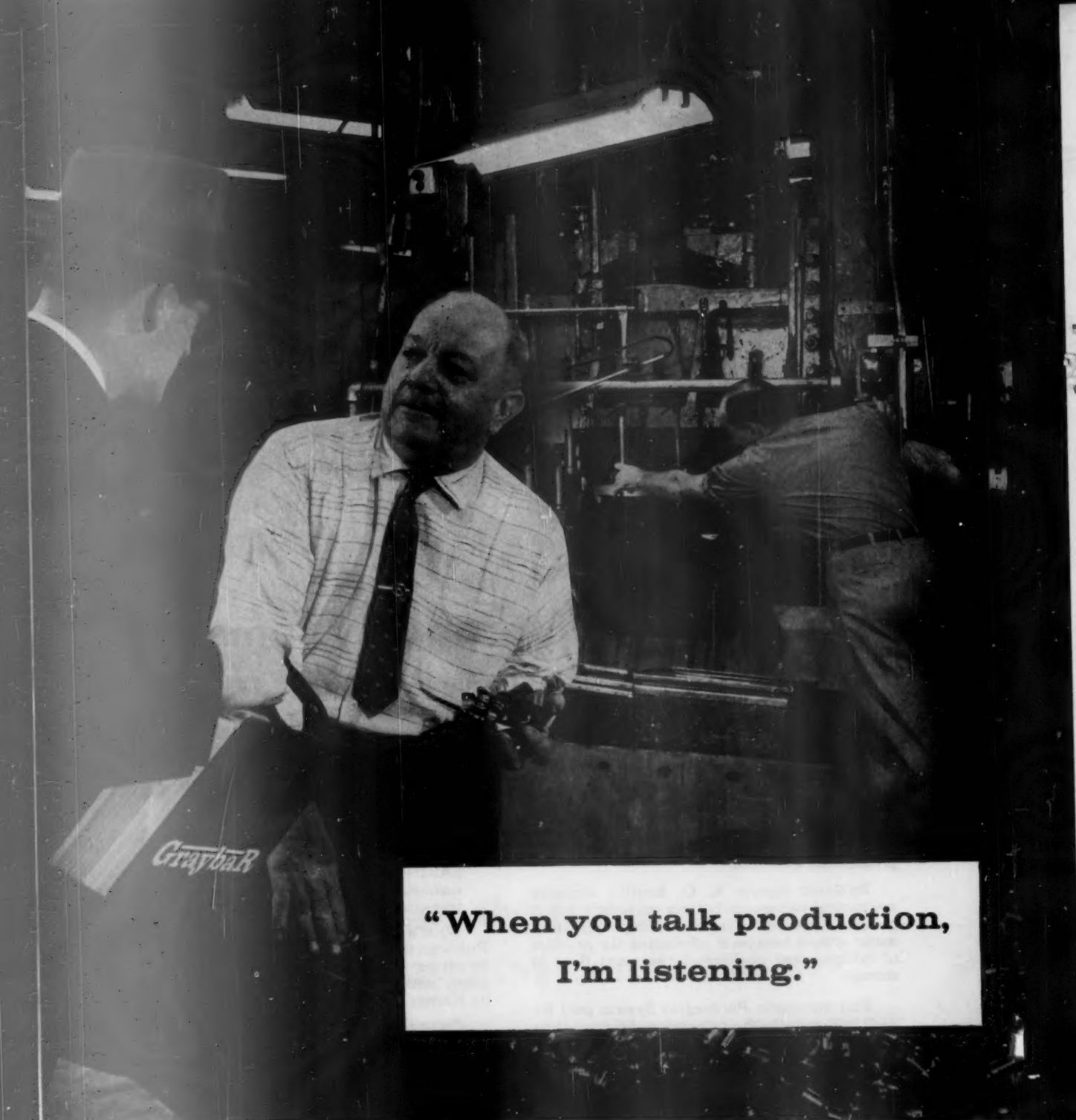
Company.....

Address.....

City..... Zone..... State.....







**"When you talk production,  
I'm listening."**

First things first . . . production's the subject when the Graybar man sees the production supervisor. This is why electrical equipment the Graybar man recommends, . . . and the know-how he gives, help keep production rolling.

Graybar is the leading independent electrical distributor. Next time . . . call Graybar. We'll work with you or your electrical contractor.

**GraybaR**  
**ELECTRIC COMPANY, INC.**

420 LEXINGTON AVENUE, NEW YORK 17, N. Y. • OFFICES IN OVER 130 PRINCIPAL CITIES





# PURCHASING

The Methods and News Magazine For Industrial Buyers

JUNE 20, 1960  
VOLUME 48, No. 13

B. P. MAST  
Chairman of the Board

B. P. MAST, JR.  
President

RAY RICHARDS  
Vice President and Publisher

Pulse of Business .....	7
The P. A.'s Outlook .....	13
Price Trends .....	15
Sales, Inventories, New Orders .....	19
Washington Report .....	21
Purchasing Pointers .....	67
Editorial: Improving Purchasing Performance .....	69

## 45th ANNUAL N.A.P.A. CONVENTION OPENS—70

The President's Message—72 • Management Techniques—76 • Do You Need Automation?—78 • Is Purchasing Achieving Top-Management Status?—82 • Is Foreign Competition Welcome?—84 • Evaluating Purchasing Performance—86 • The P. A.'s Role in Price Forecasting—87 • Is Expediting a Purchasing Function?—88 • Handling Contracts and Invoices—90 • How to Cut Inventories—90 • Inventory Control for Small Companies—91 • The Emergency Requisition—94 • Cutting the Cost of Small Orders—94 • The Blanket Order—95 • Small Company Traffic Control—96 • What the P. A. Must Know About Traffic—98 • Forecasting for Materials Management—100 • What Makes a Good Supplier?—102 • Handling Salvage and Surplus Materials—104 • Reporting to Management—106 • How to Improve Your Purchasing Manual—108

## REGULAR FEATURES

In Purchasing .....	65		
Purchasing Follow-up .....	27	Products and Ideas .....	112
Information for Your Catalog Files ..	44	Office Equipment and Supplies ....	186
Letters to the Editor .....	50	Association News .....	196
Purchasing People .....	57	Employment Service .....	286
F.O.B. ....	58	Index to Advertisers .....	288

## Editorial Staff

Stuart F. Heinritz  
Senior Editor

Paul V. Farrell  
Editor

Dean Ammer  
Executive Editor

Ned Kellogg ..... Managing Editor  
Harold C. Barnett ..... Features Editor  
Leonard Sloane ..... News Editor  
John F. Sincere ..... Midwestern Editor  
John Van de Water .... Technical Editor

Mary T. Rogan ..... Editorial Assistant  
A. N. Weckler ..... Washington Editor  
Walter E. Willets ..... Consulting Editor  
A. W. Gray ..... Legal Editor  
L. J. De Rose Editorial Marketing Consultant

## ART STAFF

E. Carlton Arink ..... Art Director  
Charlotte Bank ..... Associate Art Director

## PRODUCTION STAFF

L. E. McMahon ..... Production Manager  
Barbara Grant ..... Production Supervisor

For More Information about ad on facing page  
Write No. 157 on Place Mark Card—pg. 32

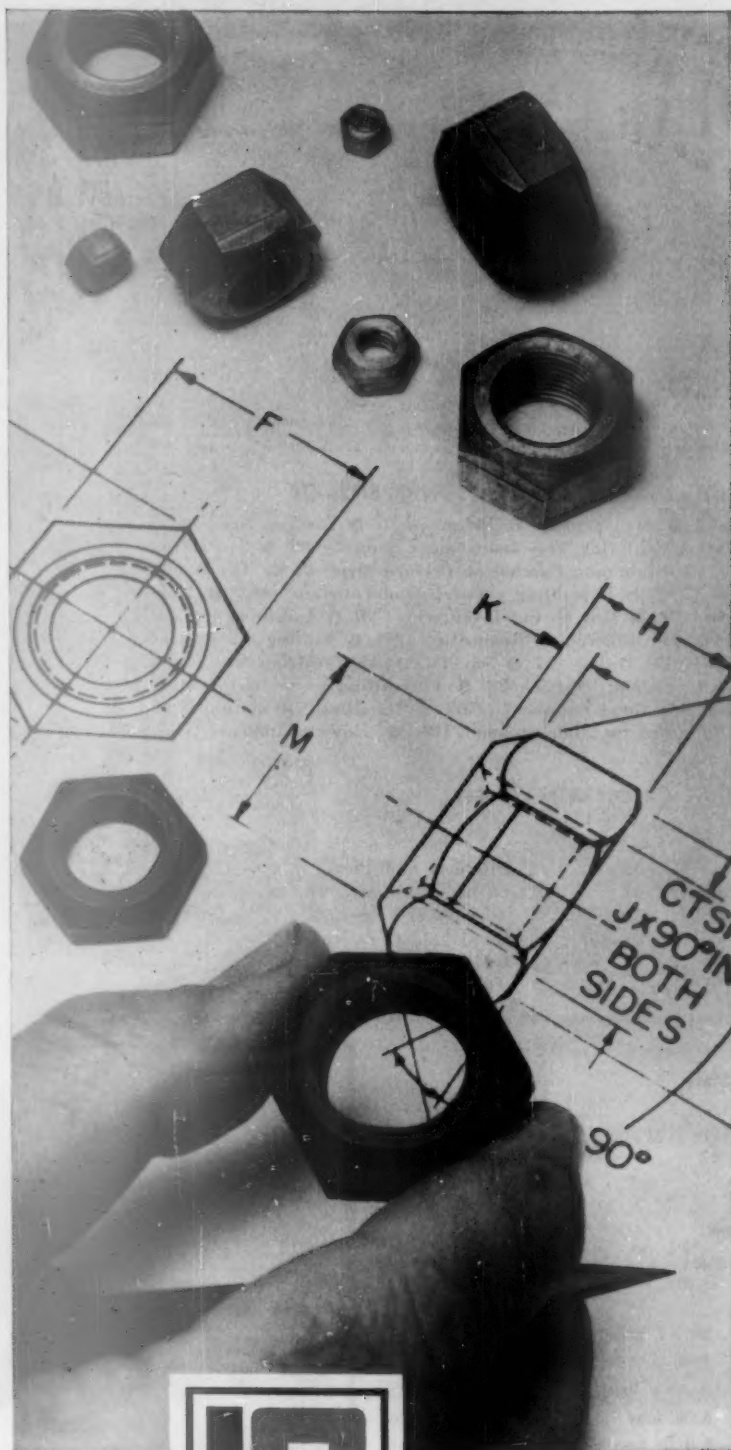
JUNE 20, 1960

## CONOVER-MAST PUBLICATIONS, INC. EDITORIAL AND EXECUTIVE OFFICES 205 East 42nd Street, New York 17, New York

© 1960 by C-M Business Publications, Inc. PURCHASING is an independent journal, not the official organ of any association. Established 1915 as "The Purchasing Agent," Consolidated with "The Executive Purchaser." Contents are indexed monthly and annually by the Engineering Index Service and Business Periodicals Index. PURCHASING is published every-other-Monday by C-M Business Publications, Inc., subsidiary of Conover-Mast Publications, Inc., at 440 Post Road, Orange, Conn. Editorial and executive offices, 205 East 42nd Street, New York 17, New York. Volume 48 No. 13. Subscription rates: United States, U.S. possessions and Canada: \$4.00 per year; single copies 75 cents; elsewhere, \$20.00 per year; single copies, \$1.00. Second-class postage paid at Orange, Conn. and at additional mailing offices.

**SUBSCRIPTION CORRESPONDENCE AND CHANGE OF ADDRESS:** Write to Circulation Department, PURCHASING Magazine, 205 East 42nd Street, New York 17, N. Y. Please give title and company affiliation in all correspondence. Notify us promptly of any change of address. Be sure to give old as well as new address; include postal zone number, and new company name and title. Enclose address label from a recent issue, if possible. Since mailing labels are addressed in advance, please allow 5 weeks for change to become effective.





## New-style Stover lock-nuts\*

*draw up 33%  
tighter to increase  
squeak-rattle  
resistance*

**Car and tractor makers alone used about 80 million new-style Stover Lock Nuts in 1959. Reasons:** savings in assembly, savings via improved squeak-rattle resistance in suspensions, steering linkage, chassis, engines, bodies.

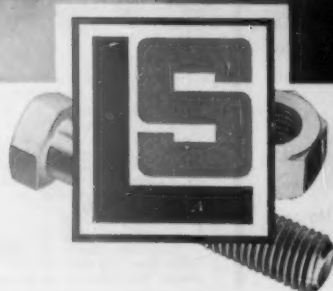
**You save in assembly:** The new Stover needs only about  $\frac{3}{4}$  the tightening torque to produce the same clamping force in bolts as produced by comparable standard fasteners and competitive lock nuts. Many companies are cashing in on this lower torque requirement by using air stall drivers, both single and multi-spindle. They're handy to use, stingy on air, economical to buy and maintain.

**You save after the sale:** Using your present drivers and air pressures, the new Stover Lock Nuts will draw up 33% tighter than comparable standard fasteners and competitive lock nuts—a whopping extra margin in squeak-rattle resistance and safe operation. Benefits: lower service costs, happier customers, repeat sales.

**What's available:** From  $\frac{1}{4}$ " dia. to  $1\frac{1}{2}$ " dia. in fine and coarse thread. Grade A is for use on bolt and stud grades SAE 2 and lower; Grade B for use on SAE grades 3, 4 and 5 bolts and studs; Grade C for use with SAE grades 6, 7 and 8 bolts and studs. Stover nuts for use with machine screws No. 8 and larger are available on special order as are stainless steel and non-ferrous. Where space is a problem, such as on pinion and pulley shafts, Stover jam (thin) collar-type nuts in grades A and C are recommended.

For engineering information, price data and samples, contact Lamson & Sessions.

\*Patented



### LAMSON & SESSIONS

5000 TIEDEMAN ROAD • CLEVELAND 9, OHIO

Plants in Cleveland and Kent, Ohio • Chicago and Birmingham

For More Information Write No. 158 on Place Mark Card—Page 32



# Pulse of Business

## Economists Optimistic At N.A.P.A. Convention

1960 will be a good year for business, despite the temporary slump now going on.

That's the consensus of the panelists who presented their views on the business and economic outlook at the recent N.A.P.A. convention in Los Angeles. More than a thousand purchasing agents gathered to hear the opinions of Chester F. Ogden, chairman of the Business Survey Committee and 1960 Shipman Medalist; Neil H. Jacoby, Graduate School of Business Administration at the University of California; and Dr. H. S. Schwartz, Federal Reserve Bank of California.

## Second-Half Business Will Top First 6 Months

Ogden, reporting on the results of the recent N.A.P.A. business survey noted that many P.A.'s seemed to feel that "the 'soaring sixties' have been ushered in by a 'snoring sixty.'" But he added that "we have the paradoxical situation where 'good business' is producing a number of disappointments."

Fifty-three percent of those surveyed said that 1960 had not lived up to expectations thus far, he reported. The reason: too many companies were too optimistic in setting their goals.

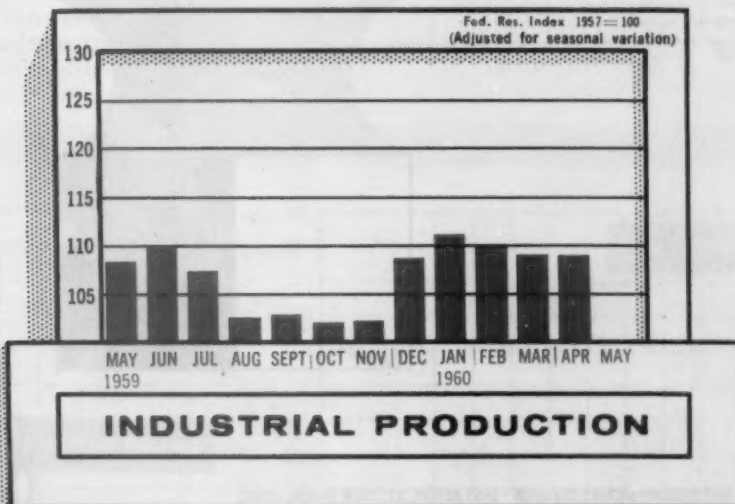
"Most expected 1960 to produce a boom and then sat back and waited for it to occur," Ogden said. "That this has not happened is readily evident by examining some of the specific statistics."

He noted that "commodity prices have remained relatively constant—despite rising labor rates . . . In many products, 'book prices' are merely a starting point" for negotiation.

In line with their desire to reduce inventories most P.A.'s are following a cautious buying policy, Ogden said (see p. 13).

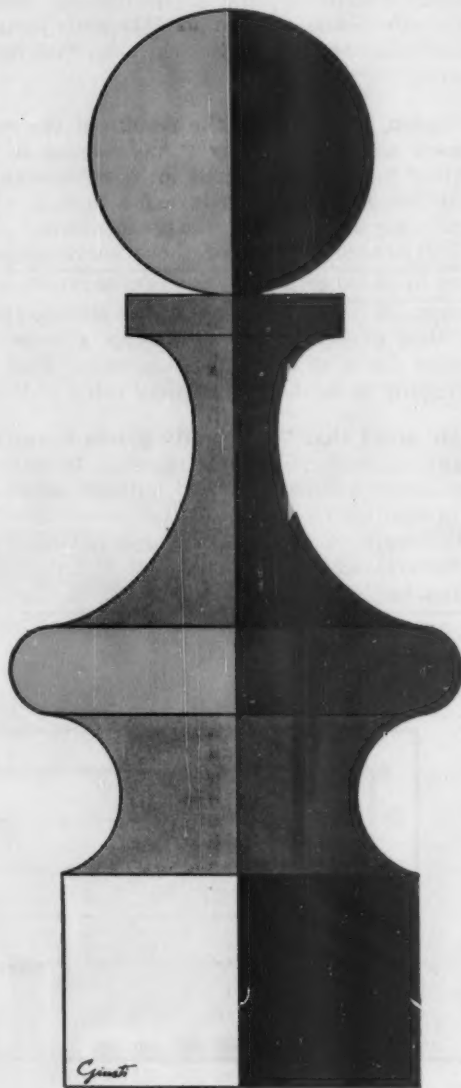
Nevertheless, he reported that 47% of the Business Survey Committee believe second half 1960 will be better than the first. "They do not look for a boom," he said, "but rather a modest and a gradual improvement." (Turn Page)

The latest FRB Industrial Production Index remained steady at 100 (1957 = 100). However, the durable segment dropped two points, while nondurables advanced a point.





You'll form it faster with Western Brass because...one machine pass can take you from brass strip or sheet to a completely formed pen cap, hose coupling, lighter case, lamp base or similar shape. And Western Brass offers a special advantage. Users will tell you that our skill in annealing and rolling actually gives them more strip per dollar...more good parts per pound. You'll make it better with ductile, formable brass. You'll make it best with "tailor-made" Western Brass.



OLIN MATHIESON • METALS DIVISION • EAST ALTON, ILL., NEW HAVEN, CONN.



*Western* BRASS



Noting that "business to date in 1960 has been good," Ogden added "it has not lived up to its pre-billings . . . Materials will continue to be readily available and prices will be held in check." And, he said, buying policies will be flexible "so that they can be quickly altered should there be a major change in any important factor affecting our economy."

Economist Neil Jacoby stated emphatically that "the American economy will continue to expand during 1960." He said "the economy has not been growing as rapidly as enthusiasts predicted, but it has been growing."

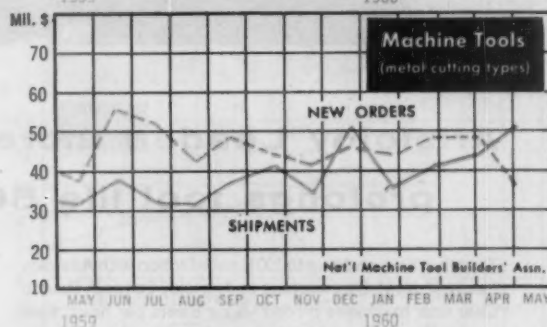
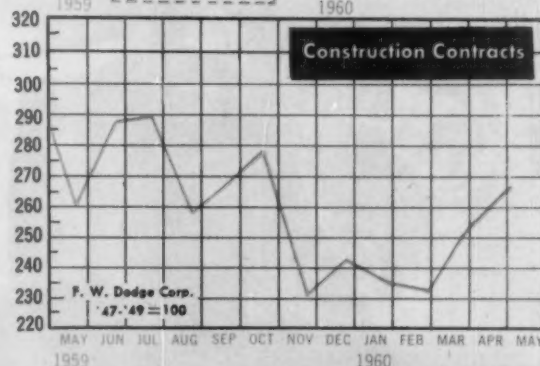
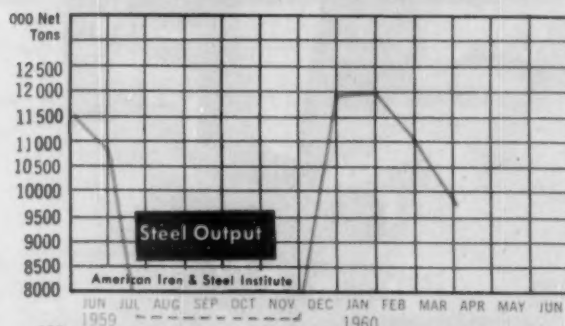
However, he warned that "a general business recession may be expected to begin in the spring or summer of 1961 . . . The current phase of inventory built-up could well reach critically high levels by spring 1961."

He added that "increases in demand of the defense sector during the first half of 1961 are unlikely, to say the least. A new administration (Republican or Democratic) may take quite a different view of the appropriate size of the military budget than Eisenhower has taken."

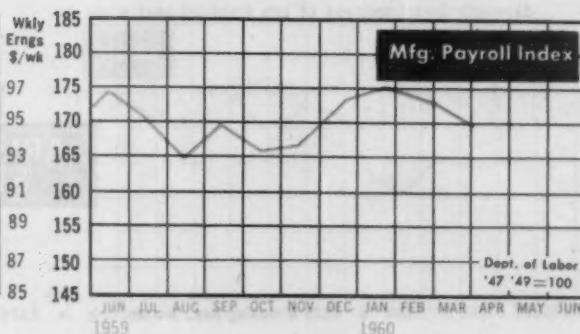
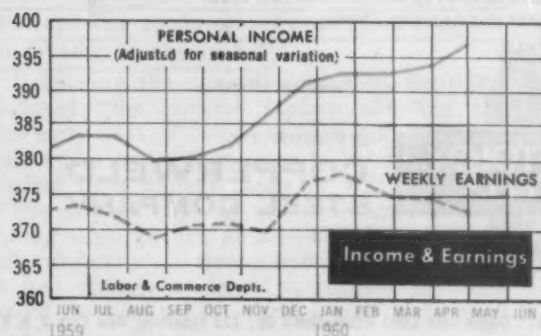
The economist noted "money rates have already seen their peaks for the next year or two . . . The trend toward easier money conditions will probably continue and further relaxation is not improbable."

He said that purchasing agents, along with other American businessmen, "are now taking a more sober view of economic prospects than last year." The promise of the next decade, he noted, "will be realized only through hard work, intelligent and alert management, and disciplined and responsible public policies."

## PRODUCTION



## LABOR





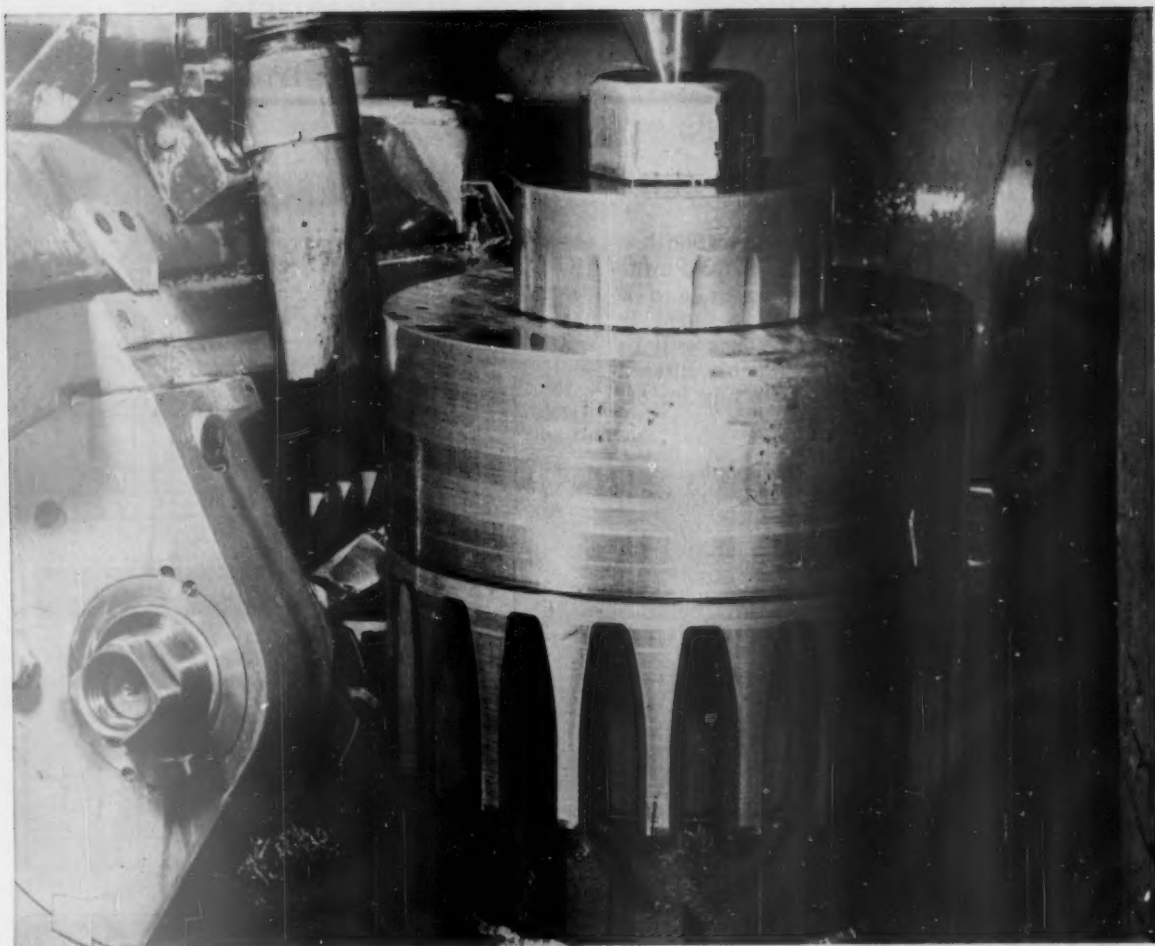


Photo courtesy Boston Gear

## Aristoloy Leaded increases hob speed 50% ... prolongs tool life 50% for **Boston Gear**

Together these add up to 100% satisfaction with Aristoloy Leaded® steel. By switching to Aristoloy Leaded, Boston Gear now machines three 7" Spur Gears per hour. Best production achieved on the steel previously used was two per hour.

With Aristoloy Leaded, 24 gears are cut before the hob needs sharpening ... only 16 were possible with other steel used by Boston Gear.

Strength and hardness of the finished part show no

detectable difference in physical properties from the unleaded steel used earlier.

For complete information about Aristoloy leaded or standard analyses carbon, alloy, and stainless grades, write for booklet entitled, "A Complete Line of Leaded Steels," and new Products and Facilities Catalog.



\*Inland Ledyo License



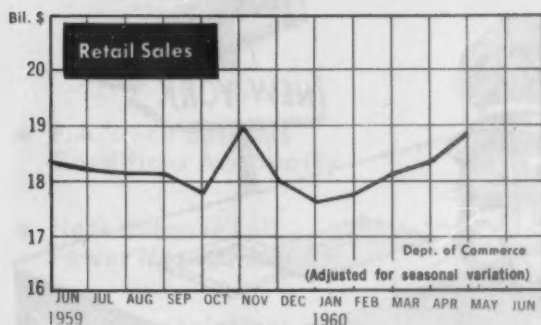
DIVISION OF  
**COPPERWELD  
STEEL COMPANY**

ARISTOLOY STEEL DIVISION • 4029 Mahoning Ave., Warren, Ohio • EXPORT: Copperweld Steel International Co., 225 Broadway, New York 7, N. Y.

For More Information Write No. 160 on Place Mark Card—Page 32



## Pulse of Business



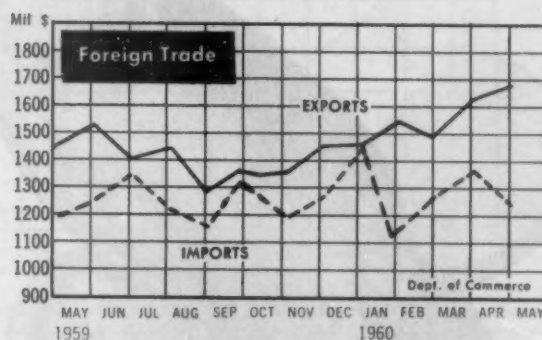
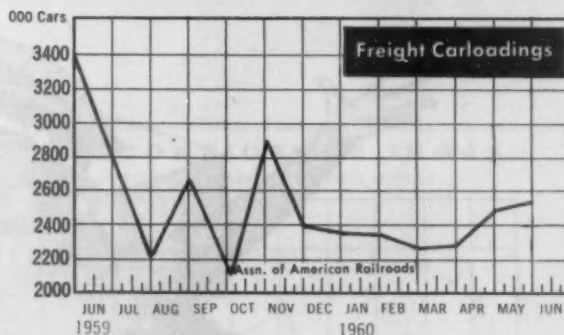
Dr. H. S. Schwartz, Federal Reserve Bank of California; discussed a topic of major interest to P.A.'s: the impact of foreign economies on our way of life.

There has been "a quickening advance in the major industrial countries abroad," he said. "Given this type of environment and a sharp increase in credit extensions, measures have been taken to tighten credit availability in a number of countries and many have raised discount rates in the past six months. There is also an increasing effort to improve the fiscal posture in a number of countries."

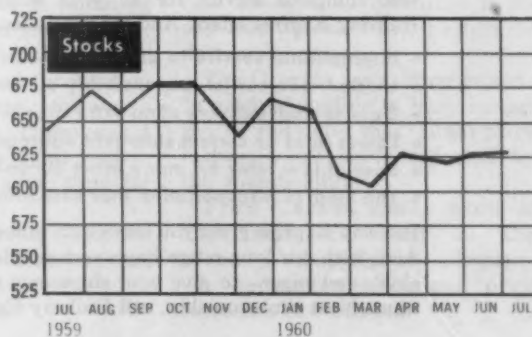
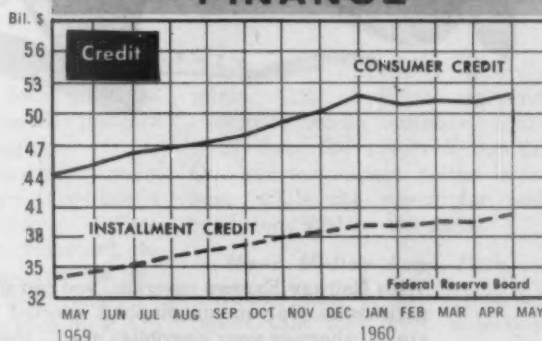
He observed also that "recovery abroad has accelerated demand for our products and government assistance has added to the movement of our cotton abroad. At the same time, foreigners are less willing to sell us some types of steel."

Schwartz said that "rising prices abroad may make our goods look more attractive . . . We must realize, therefore, that our products should be designed with an eye to foreign markets and our goods priced even more competitively than in the past."

Regarding the domestic economy, Schwartz declared "the adverse factors affecting the the early part of the year have had their impact and at most they seem to have induced a decline in a limited range of activities . . . While no one can say with certainty that a strong upsurge lies ahead—and the signs do not yet indicate a strong upward surge—there is just enough evidence to suggest that one would be wise not to dismiss such a development completely."



## FINANCE





# nationwide coverage



## with eager-beaver thoroughness!

With Railway Express coverage, you can ship locally. You can ship nationwide. Or you can pinpoint selected markets. Wherever you are... wherever your customers are... Railway Express is nearby.

One complete service for all your shipping needs—that's what Railway Express offers. And that includes:

- International service to and from almost anywhere in the world
- Unified, one-carrier responsibility all the way
- Door-to-door delivery at no extra charge (within authorized limits)
- Lower rates on certain shipment aggregations of 300 lbs. or more
- Special low rates on many other commodities
- The kind of transportation that best suits your particular needs

Railway Express gives you service no other organization can match. And, with our long-range improvement plans well underway, we're able—and eager—to give your shipments the thorough service you want. Next time you ship, call Railway Express—and see!





## The P.A.'s Outlook

- **P.A.'s Say Business Conditions Are Spotty**
- **Note Summer Lull, Fewer New Orders**
- **Local Associations Report Leveling Out**

**A**T CONVENTION time, purchasing agents seemed to be growing increasingly pessimistic about the short-term business outlook.

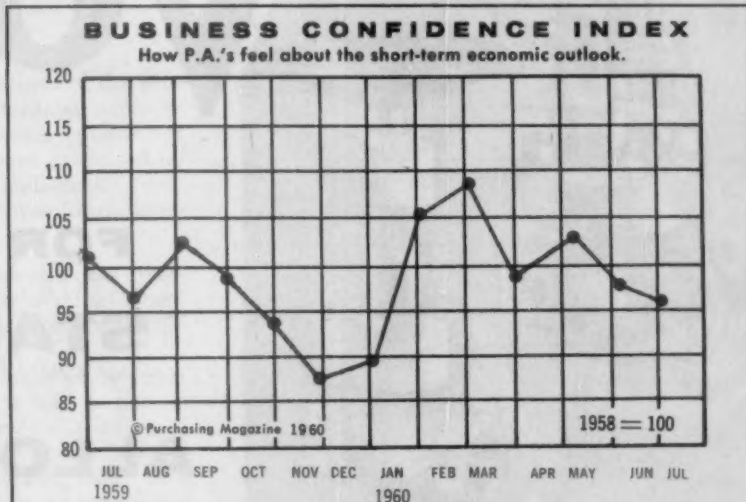
PURCHASING Magazine's Business Confidence Index—derived from a survey of 1000 P.A.'s—dropped another point to 97 (1958 = 100).

This second consecutive monthly decline in the index indicates slightly depressed business for the next few months. Fewer P.A.'s predicted better business in the next three months than had in any of the surveys made during 1960.

For example the purchasing agent for a Philadelphia manufacturer says, "Our new order picture is never good during the summer months. But this year, we expect business to be even lower than usual."

The purchasing director for a Midwestern chemical company observes: "We had a good sales volume in the early part of the year. But there is a good possibility that this will now fall off somewhat."

And a buyer for a New England metalworking firm notes: "Business may go down a little in the next few months. But in the fall, I expect it to start getting better."



Purchasing Magazine's Business Confidence Index dropped again in June, marking the second consecutive decline. The index—derived from a sampling of purchasing agent opinion throughout the country—slipped one point to 97 (1958=100) and indicates, a slightly lower level of business during the next three months.

Recently-issued business survey reports from local purchasing agent associations also indicate that business is lagging.

The Chicago association says, "Manufacturers are following a conservative inventory policy. Buyers are most reluctant to make forward commitments beyond actual known requirements."

It adds that resistance by P.A.'s "to price increase is bringing results." And it notes a softening in the overall production picture.

Says the Cleveland association: "It appears as though production and new orders are entering a leveling out period. There was a little more stability evidenced in May than at any time thus far in 1960."

However, it reports "expressions of confidence that business will tend upward after the summer vacation period."

According to the Pittsburgh group, 41% of those surveyed anticipate worse business conditions than the previous month. One-quarter expect better business, while the remainder feel conditions will be the same.

### Need 60-Day Lead Time

Almost half of those queried report that they need a 60-day lead time for production material. Close to 40% require a 30-day lead time and 14% require 90 days or longer.

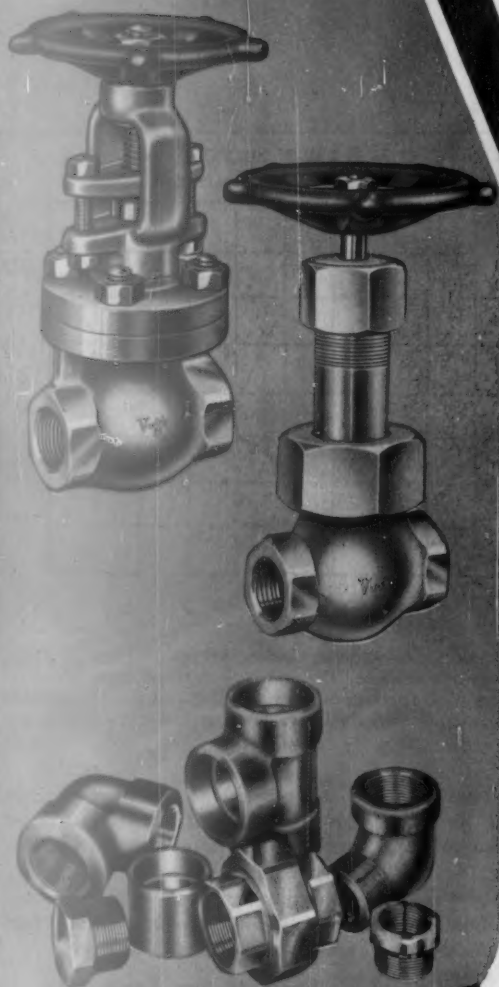
The Georgia association reports "a gradual decline in business activity" and notes that "slight price increases are being reported by the membership."

From Canada comes word of "minimum movement in the economy". Supplies are adequate, the association says, and price increases are limited.



Look  
to...

# Vogt



**FOR FORGED  
STAINLESS  
AND  
ALLOY STEEL**

**Valves, Fittings  
and Unions**

**IN STOCK AND READY TO GO!**

BE SURE to consult the new Vogt Catalog F-10 when in need of top quality forged stainless and alloy steel piping products for severe operating conditions.

The complete Vogt line includes sizes and types to fit your process requirements with high resistance to corrosion, complete freedom from product contamination, and long service life.

**HENRY VOGT MACHINE CO.**  
**Louisville 10, Ky.**

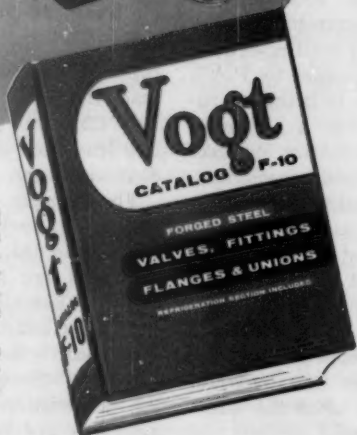
**SALES OFFICES:**

New York, Chicago, Cleveland, Dallas, Camden,  
N.J., St. Louis, Charleston, W.Va., Cincinnati

**CATALOG F-10**

Vogt stainless and alloy steel materials are shown in their application to specific types of piping products in this 432 page catalog.

Write for a copy on your company letterhead. Address Dept. 24A-FPM.



For More Information Write No. 162 on Place Mark Card—Page 32



## Price Trends

- N.A.P.A. Convention Reports On Commodity Outlook
- Forecasts Market Trends For Steel, Nonferrous, Fuel

AMONG THE most popular features of the 1960 N.A.P.A. convention were the afternoon commodity forums. Forecasts on the market outlook for various important commodities were presented by experts to large and responsive audiences.

Here's a capsule summary of these forum presentations:

**Steel**—Supply in the steel industry has overtaken demand and shortages are a thing of the past. Thus there will be increasing pressure against both wage and price increases.

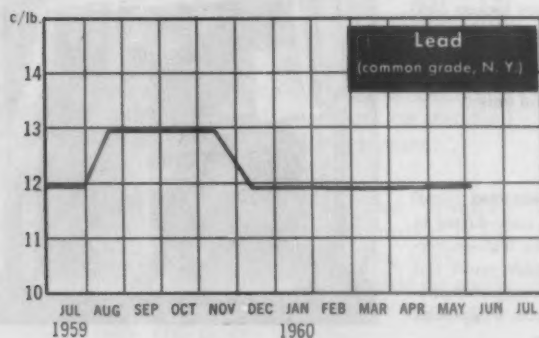
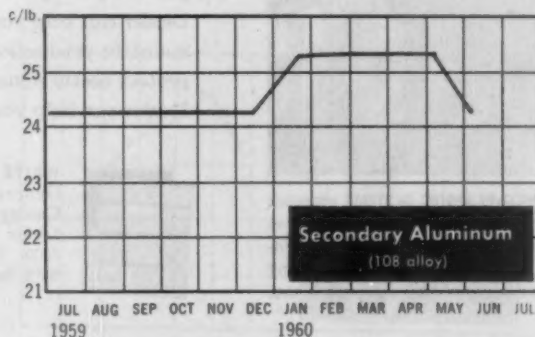
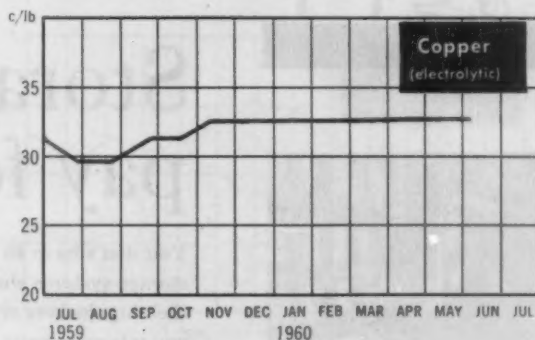
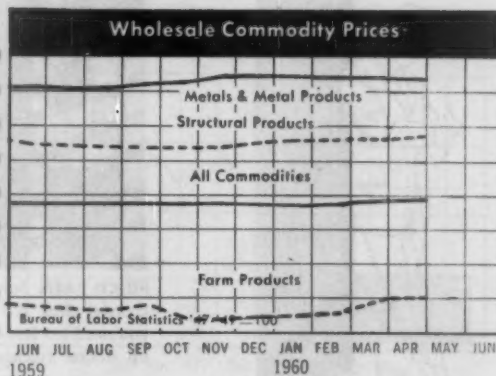
The steel industry is trying to improve its operating efficiency in the hope that it may be able to absorb upcoming wage increases. In addition, if management can put through some of the changes in work rules that it wants, there is a strong possibility that there will be no substantial price hikes.

Steel will continue to be the prime industrial raw material. But it is no longer necessary to maintain large inventories as insurance against shortages.

**Nonferrous Metals**—Adequate production of copper is expected for the long run, with output geared to anticipated consumption. For the next few months at least, prices will remain stable.

**Aluminum** production this year will be less than was estimated earlier. Reason: decreasing demand from P.A.'s.

(Turn Page)







**PENCO T-LINE** Boldless Steel Shelving is quickly assembled (and adjusted) with easy-handling channel clips. No tools required; original installation labor costs are cut up to 50%. Whether you need ten feet of shelving or four miles (as in installation above) Penco-planned systems step up worker efficiency, cut housekeeping costs and make maximum use of floor space.

## Storage space should pay for itself, too

You don't have to look twice to see the savings and efficiency in the storage systems shown here. For Penco Planning integrates Penco steel shelving, lockers and cabinets into plant operations as carefully as you integrate your materials flow and production processes. Your Penco Dealer can help you use storage facilities to break supply bottlenecks, maintain production lines, tighten inventory control, discourage thievery, protect costly materials and dies, speed shipments. In short, your Penco Dealer can help you make storage space pay off! Call him today.



**PENCO-PLANNED SYSTEMS** get stock and storage rooms organized, save hours formerly wasted by employees wandering around looking for things. Reduce fire hazard, too.



**WRITE FOR** Penco General Shelving Catalog No. 2400 and Locker Catalog No. 6000. They're filled with helpful facts!

### ALAN WOOD STEEL COMPANY



#### PENCO DIVISION

410 Brower Avenue, Oaks, Pennsylvania

Steel Lockers • Steel Cabinets • Steel Shelving • Book Case Units



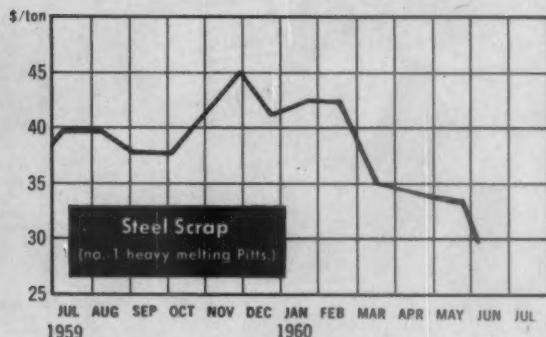
**CLEAMING-BRIGHT** Penco lockers (*left*) encourage employee neatness and pride. Special pre-enamel *phosphatizing* step at Penco assures tight, tough, enamel bond ... permanently beautiful finish.

**NEW SERVICE-TRUCK SHELVING** (*right*) by Penco utilizes space once wasted in delivery and utility trucks. Wall-anchored unit speeds maintenance, repair and customer service with compartmentalized storage of tools, parts, equipment.





## Price Trends



**Tin** supplies are adequate, at least until mid-1961. Consumption is gradually increasing, but prices in the upcoming months will probably be stable.

**Fuel Oil**—Supplies are expected to be adequate through 1964. However, there are likely to be short-term fluctuations in availability and prices on the East Coast.

Although the West Coast price will fluctuate with changing demand, the average price over the long run will be about the same as the present. That's because a floor is set under this price by the availability of East Coast markets.

Temporary shortages could occur throughout the country if import controls do not allow sufficient volume of foreign oil to meet demand.

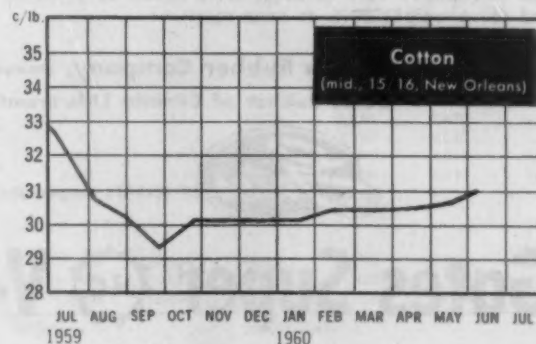
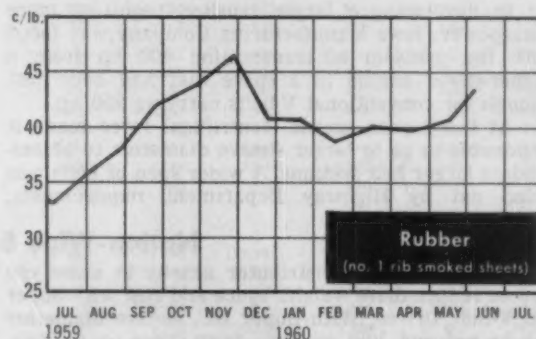
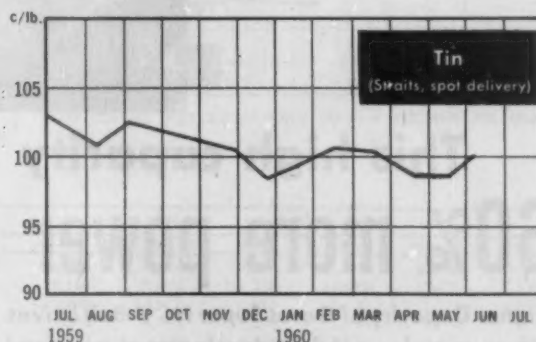
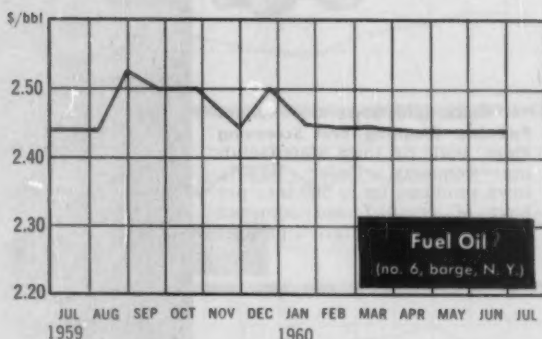
**Containers**—Demand for plastic containers is increasing. Plastic sales in the packing industry have risen to \$650 million. Nevertheless, these sales still account for only 8% of the materials used by the container industry.

New developments are constantly being turned out of the R&D labs. A recent one is an automatic machine to form an oriented polystyrene sheet into packages without heat or adhesives.

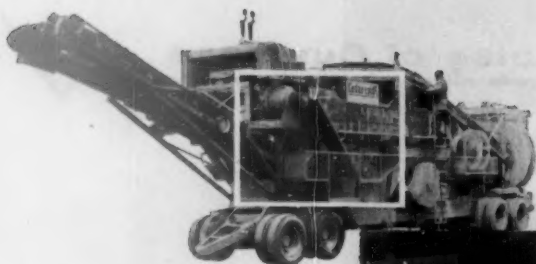
Two sheets of Kraft paper can now be glued to a sheet of styrene foam. This new container board can be scored, slotted, or die-cut on standard corrugated and new set-up box equipment.

**Paper**—Paperboard production has dropped from last year, but newsprint consumption is expected to hit a new high of 7.6 million tons.

Coated and uncoated fine papers should be easily available for the rest of the year. Book paper production is high and prices are stable.







**Cedarapids Super Commander**  
Portable Crushing and Screening  
Plant, built by Iowa Manufactur-  
ing Company, Cedar Rapids,  
Iowa, produces up to 500 tons per  
hour of crushed and screened  
material in four different product  
sizes.



## This high capacity V-Belt Drive handles 60% more power in 30% less space!

### Higher Capacity of Gates Super HC V-Belt Drives solves complex product-development problem!

In developing a larger crusher, requiring more horsepower, Iowa Manufacturing Company was faced with the problem of transmitting 400 hp from a higher-speed engine in a space that had been just enough for conventional V-belts carrying 250 hp.

At the higher speeds, centrifugal force made it impossible to go to larger sheave diameters to accommodate larger belt sections. A wider span of belts was ruled out by Highway Department requirements,

which restricted overall machine width to eight feet.

Iowa Manufacturing's designers solved their primary problem of transmitting 60% more horsepower with new Gates Super HC V-Belts.

Because Super HC V-Belts have smaller cross section, use narrower and lighter-weight sheaves, pack higher hp capacity in a smaller 'package' than conventional V-belts, designers also succeeded in reducing drive weight, width and height—a decided bonus in equipment that must be moved frequently both on and off the highway.

### Nation-Wide Engineering Service

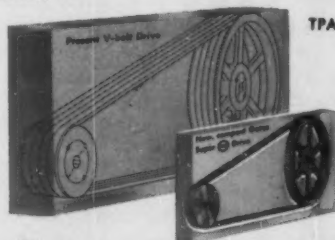
There's a Gates Distributor nearby to show you how to reduce drive weight, space and cost with Super HC V-Belt Drives. With Super HC, sheave diameters can be reduced 30% to 50%, drive space up to 50%, and drive weight 20% or even more.

Ask your Gates Representative for your free copy of "The Modern Way to Design Multiple V-Belt Drives," or write to The Gates Rubber Company Sales Division, Inc., Denver, Colorado.

**The Gates Rubber Company, Denver, Colorado**  
Gates Rubber of Canada Ltd., Brantford, Ontario



World's Largest Maker of V-Belts



TPA 503A

# Gates Super V-Belt Drives

same hp capacity  
in smaller "package"



## Sales, Inventories, Orders

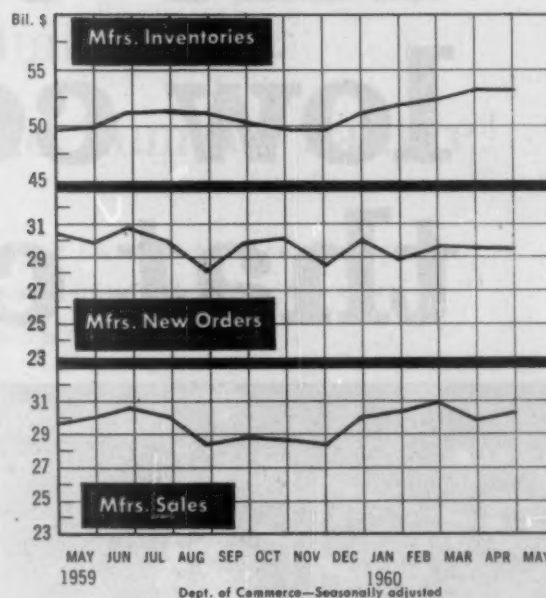
### ● Manufacturers' Sales Rise, Orders Decline

WHILE seasonally-adjusted manufacturers' sales rose in April over the previous month, new orders were unchanged. In the same period, the Commerce Department reports, inventories also advanced.

Sales were \$300 million higher, rising to \$31.1 billion. The hike was notched entirely in the nondurable goods area.

Although new orders of durables manufacturers fell \$200 million, the same amount was gained by nondurables producers. A particularly noticeable order decline was felt by transportation equipment companies.

Inventories increased \$300 million to \$54.6 billion. However, the rate of accumulation was slower than in the two previous months, when the value of stocks rose \$400 million and \$600 million, respectively.



### Manufacturers' Sales Seasonally Adjusted (Millions of Dollars)

	1959			1960		
	Apr.	Dec.	Jan.	Feb.	Mar. (r)	Apr. (p)
All manufacturing industries.....	30,266	30,814	30,787	31,580	30,840	31,100
Durable-goods industries.....	15,166	14,992	13,352	15,670	15,170	15,100
Primary metal.....	2,792	2,815	2,656	2,690	2,540	2,310
Fabricated metal.....	1,684	1,751	1,690	1,720	1,690	1,700
Machinery.....	4,423	4,699	4,695	4,840	4,750	4,870
Transportation equipment.....	3,385	2,970	3,622	3,570	3,460	3,400
Lumber and furniture.....	995	906	843	920	880	920
Stone, clay, and glass.....	756	707	737	770	700	730
Nondurable-goods industries.....	15,100	15,822	15,435	15,900	15,670	16,000
Food and beverage.....	4,507	4,687	4,723	4,720	4,710	4,770
Tobacco.....	411	431	387	430	420	390
Textile.....	1,253	1,267	1,226	1,260	1,200	1,280
Paper.....	1,034	1,049	994	1,070	1,050	1,040
Chemical.....	2,090	2,371	2,268	2,380	2,300	2,380
Petroleum and coal.....	3,080	3,148	3,044	3,130	3,160	3,210
Rubber.....	543	508	506	570	510	540

### Manufacturers' Inventories Seasonally Adjusted (Millions of Dollars)

	1959	1959	1959	1959	1960	1960
	Apr.	Dec.	Jan.	Feb.	Mar. (r)	Apr. (p)
All manufacturing industries.....	51,052	52,316	53,182	53,900	54,340	54,650
Durable-goods industries.....	29,361	30,000	30,622	31,260	31,770	31,920
Primary metal.....	4,368	4,114	4,172	4,320	4,450	4,640
Fabricated metal.....	3,175	3,105	3,091	3,230	3,330	3,290
Machinery.....	9,346	9,848	10,174	10,320	10,480	10,540
Transportation equipment.....	7,031	7,135	7,308	7,530	7,640	7,600
Lumber and furniture.....	1,731	1,854	1,886	1,870	1,860	1,850
Stone, clay, and glass.....	1,235	1,359	1,381	1,380	1,420	1,420
Nondurable-goods industries.....	21,691	22,316	22,560	22,640	22,570	22,720
Food and beverage.....	4,870	4,775	4,796	4,820	4,820	4,840
Tobacco.....	1,868	1,972	1,975	1,950	1,950	1,960
Textile.....	2,482	2,490	2,554	2,650	2,670	2,700
Paper.....	1,463	1,500	1,541	1,540	1,540	1,540
Chemical.....	3,696	4,049	4,050	4,050	4,060	4,080
Petroleum and coal.....	3,367	3,306	3,405	3,400	3,330	3,350
Rubber.....	1,015	1,124	1,148	1,140	1,160	1,190

### Manufacturers' New Orders Seasonally Adjusted (Millions of Dollars)

	1959	1959	1959	1959	1960	1960
	Apr.	Dec.	Jan.	Feb.	Mar. (r)	Apr. (p)
All manufacturing industries.....	31,206	30,890	29,698	30,590	30,290	30,320
Durable-goods industries.....	15,796	14,886	14,231	14,800	14,640	14,440
Nondurable-goods industries.....	15,410	16,004	15,467	15,790	15,650	15,870

(r) Revised.

(p) Preliminary.



# The only low cost that counts



Washed coal stores better, handles better, and results in lower equipment maintenance costs.

You're not about to lose all interest in the invoice price of coal. But the closer you get to the coal picture in your plant, the more you realize that the important cost is the net cost per 1000 pounds of steam, and not the cost per million BTU. And it's when these final net costs are figured that the wisdom of choosing Island Creek Precisioneered Coals shows up. For

...when you buy coal...is low cost per 1000 pounds of steam. And that's why so many purchasing and plant men agree on Island Creek Precisioneered Coal.  
.....

these coals are from inherently superior seams, mined and prepared by the most modern methods to perform most efficiently in the specific burning equipment in which they will be used. Our engineers would like to lay some case histories before you and your plant people . . . and let you take it from there. Write or phone. No obligation.



**ISLAND CREEK**  
**Precisioneered Coal**  
.....

*You can depend on Island Creek . . . a career company dedicated to coal*

ISLAND CREEK COAL SALES COMPANY, Chafin Building, Huntington 18, West Virginia • Chicago • Cincinnati • Cleveland • Detroit • Greensboro • New York • Pittsburgh



# Business Reacts Calmly to U-2 Incident and Summit Failure

*The business community hasn't panicked because of the most recent international crisis. For there's been neither a stepup in inventory buying nor a runup in commodity prices.*

THE U-2 incident and the subsequent summit conference flop has been and will continue to be a political issue. However, it hardly created a ripple on the economic scene.

In previous years, an approach toward the brink of war was accompanied by sharp business reaction. Thus what might have been expected in the last few weeks was:

(1) A stepup in inventory buying.

(2) A runup in commodity prices.

(3) A general tightening in the money markets.

(4) Increased retail buying, especially of items traditionally scarce during wartime.

In contrast, the recent trend toward smaller inventories has continued. There has been no flurry in commodity prices. Credit has been becoming progressively easier, and consumer buying has not reflected anything other than the normal seasonal patterns.

The general reaction here to the summit breakup is this: it is another of the great disappointments in the process of establishing world understanding. But it is in no way a major signpost pointing toward war.

This view is especially apparent in the reaction of the banking community. While there is no real trend toward lower prices, the fears of inflation that prevailed

last year have practically disappeared.

### Credit Demand Drops

The Federal Reserve System reports that for the first time since February 11, 1959, the total position of its member banks is one of free reserves in excess of requirements. This means that the demand for credit has dropped and loans of all kinds will become easier.

During past periods when this has occurred, the Federal Reserve has successively dropped its discount rates in stages, making it cheaper to borrow money. Such a course is generally forecast during the current cycle. The first of these cuts has already taken place. But no major reduction in long-term interest rates is anticipated.

A major factor in the easing of money, according to Federal Reserve spokesmen, has been the trend in industry toward lower levels of inventory. This is expected to continue during the remainder of the year.

### ● 1st Q Inventory Rise Featured Durables

The rapid buildup of inventory during the first quarter of 1960 was almost wholly in the durable goods industries. A Department of Commerce analysis of inventory trends shows that 90% of the rise

in the first three months was in durable goods.

January was the peak month in the inventory advance. The Commerce Department study shows how quickly buyers built up metals stocks after the settlement of the steel and copper strikes.

As an example of the rapid buildup of inventories during the first quarter of the year, the shipments of steel companies dropped 20% from January to April. In April, new orders added up to only three-fifths of the value of shipments.

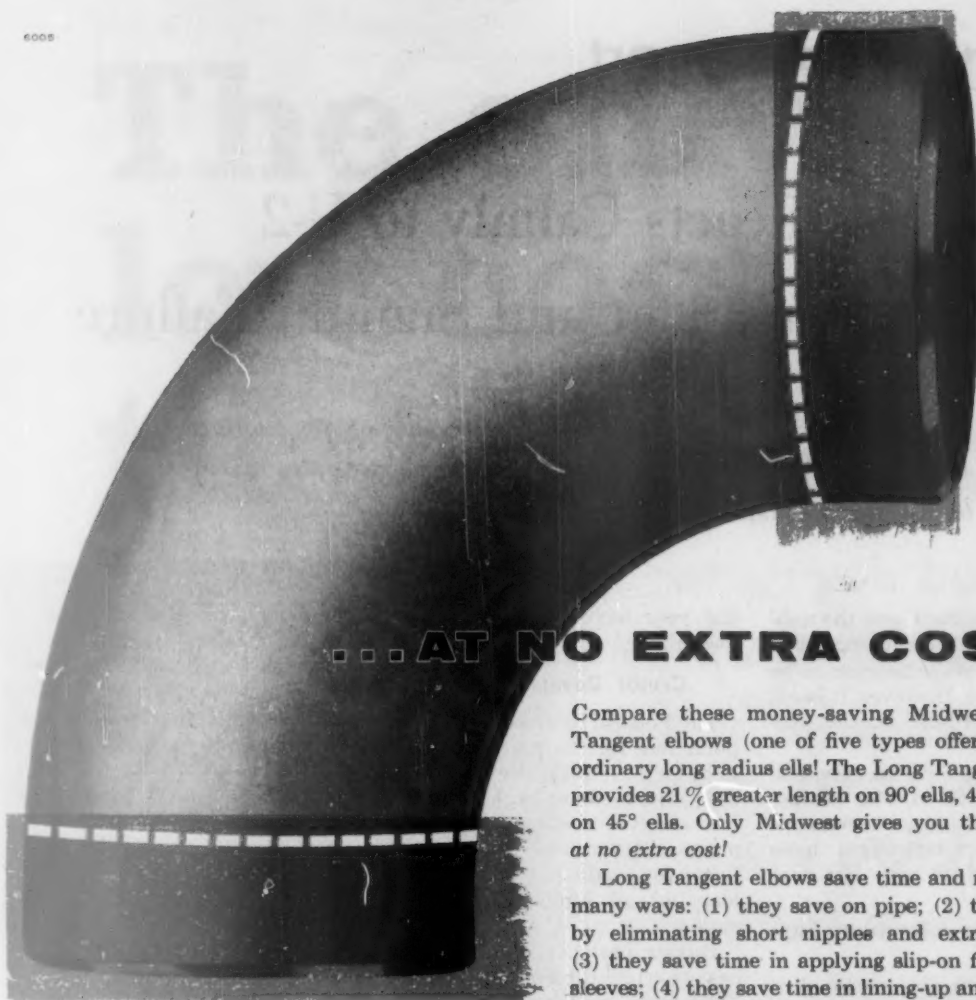
### Effect of Bad Weather

In an analysis of what happened on a month-to-month basis, the impact of the long stretch of bad weather in early spring becomes clear. Buyers built up their inventory positions quickly after the strikes were settled and were prepared for a large volume of sales in the spring. When these failed to materialize—because consumers were discouraged from buying by the unseasonably bad weather—a temporary market glut developed.

This excess cleared up quickly as the weather changed. Consumer buying in the late spring pushed ahead more than seasonally.

In nondurable goods, inventories were built up all during 1959 and the first two months of this year. Since then, minor stock





...AT NO EXTRA COST!

Compare these money-saving Midwest Long Tangent elbows (one of five types offered) with ordinary long radius ells! The Long Tangent type provides 21% greater length on 90° ells, 42% more on 45° ells. Only Midwest gives you this bonus at no extra cost!

Long Tangent elbows save time and money in many ways: (1) they save on pipe; (2) they save by eliminating short nipples and extra welds; (3) they save time in applying slip-on flanges or sleeves; (4) they save time in lining-up and clamping pipe; and (5) it is easier to replace an ordinary ell with a Midwest Long Tangent than with another ASA ell.

Only Midwest manufactures and stocks Long Tangent ells in a complete size range through 36". Also available with special tangent lengths at slight additional charge.

Write for catalog which shows complete selection of Midwest welded-type and seamless fittings.

*Sold through Stocking*

*Distributors from Coast to Coast*

**21%  
MORE  
ELBOW**

**MIDWEST**

**MIDWEST PIPING COMPANY, INC.**  
1450 S. Second Street St. Louis 4, Missouri

THE WORLD'S MOST COMPLETE LINE—  
SEAMLESS AND WELDED-TYPE FITTINGS

For More Information Write No. 166 on Place Mark Card—Page 32



## Washington Report

liquidations have begun in several industries.

Underlying the general market strength is the level of consumer buying, which is currently reported at an annual rate of \$321 billion. This is \$4 billion higher than the rate of the final quarter of 1959. In addition, it is nearly 6% above a year ago in dollar value and over 4% more in volume.

### ● Interest in Economic Legislation Wanes

Congress is closing its current session in an economic climate that has changed completely from January.

The changes have drastically shifted the legislative interests of the members of Congress, especially as they affect purchasing agents. At the beginning of the session, inflation was pictured as a principal threat to the economy. The evils of "administered prices" were described as one of the prime causes of inflation.

Companies with a commanding position in an industry were charged with administering the price levels. Concentration of industry and the elimination of competition were decried. Demands were made for legislation to ward off these dangers.

However, the session is closing in a period of stable prices. There is also a strong indication of vigorous price competition, especially with imported products.

In addition, recent statistics show that operating concerns in this country numbered 4,250,000 at the beginning of this year—an increase of 75,000 from a year earlier. A total of 420,000 new businesses were established in 1959 and 345,000 were discontinued.

Thus it now appears that the dangers of inflation and concentration had been highly exaggerated.

As these facts became known to members of Congress, support was diverted from certain measures that had been proposed early in the session—including those

calling for price control and additional antitrust action.

The Congress that began with a great deal of attention on inflation and economic matters is closing with more involvement in social legislation.

### ● Materials System Gives Ratings and Priorities

Steel, copper, and aluminum are no longer the controlling factors in military production. Yet the administrators of the Defense Materials Systems maintain that these three basic materials still provide an effective means of channeling the economy in case of war.

The present "DMS" is the peacetime version of the wartime Controlled Materials Plan. One concession to current realities is the inclusion of nickel alloys in the materials controlled.

Modern military hardware is less dependent on steel, copper, and aluminum than the aircraft and ground vehicles of World War II. But the basic metals are still an effective means of bringing the entire economy under control.

"DMS" officials point out that for the past six months under revised regulations, the use of ratings and priorities is mandatory on defense orders. This was done so that the Business and Defense Services Administration could get an accurate tally from the mills about how much material is going into military products.

The present operation of DMS is largely in the nature of standby insurance. Here is how the system works:

Defense needs are broken down into 13 categories, such as missiles, aircraft, ships, tanks, and ammunition. The government periodically determines how much controlled materials are needed for each of these categories.

These amounts are broken down into specific allotments of controlled materials, which are assigned to prime contractors by the various defense agencies. Purchase orders up to the amount of these allotments must be accepted

# HARDINGE

## Collets, Feed Fingers — Pads



For all Automatic Screw  
Machines, Chucking Machines,  
and Turret Lathes.

Available for: Brown & Sharpe, Cleveland; Cone, Davenport, Greenlee, Acme-Gridley, National Acme, New Britain, Warner and Swasey, Jones & Lamson, Gisholt, Bardons and Oliver, Foster, Morey, Simmons and others.

One Source of Supply for all  
your collet feed finger and pad  
requirements, means purchasing economy.

Send for Catalog 36



**HARDINGE BROTHERS, INC.**  
ELMIRA, N. Y.

Immediate Delivery from Conveniently  
Located Stocks in:

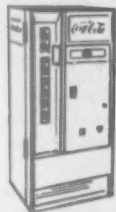
Atlanta, Boston, Chicago, Dayton, Detroit, Elmira, Hartford, Los Angeles, New York, Philadelphia (Yeadon, Pa.), Seattle, Portland, Minneapolis, Oakland, St. Louis, Springfield, N.J., and Toronto.

For More Information Write No. 167  
on Place Mark Card—Page 32





## How J-M Dutch Brand Rub 'R-Shim Helped Give 10 Years Maintenance-Free Life to Vendors for Coke†



\* A sponge rubber stripping with pressure-sensitive back, Rub'R-Shim graduated to its new application by passing a set of "survival tests". The Cavalier

Corporation of Chattanooga, Tenn., was designing its newest vendor for Coke to serve 10 years virtually maintenance free. In the "serve yourself" door, between each of three plates of glass and plexiglas, Rub'R-Shim had to give cushion protection and to seal and insulate air spaces... perform its dual role for 10 years.

One test subjected a cutdown version of the door to a million slams, equivalent of 10 years' rough use. Others tested materials for all-weather dur-

ability. A failure in just one test eliminated any material. Rub'R-Shim readily passed all, and became the door's durable insulator/shock-absorber.

As for manufacturing speed and economy, Rub'R-Shim proved as short on application time as it was long on lifetime. Pressure-sensitive, it adhered instantly, held permanently.

See how Cavalier works with its Dutch Brand representative and makes him a part of its problem-solving team. Write for new booklet, "How J-M Dutch Brand Products Helped Cavalier Build a Better Vendor For Coke".

† Coke—Registered trademark of The Coca-Cola Company.



JOHNS-MANVILLE DUTCH BRAND DIVISION  
7800 South Woodlawn Avenue, Chicago 19, Illinois  
In Canada: Johns-Manville Co., Ltd., Port Credit, Ontario

# JOHNS-MANVILLE

For More Information Write No. 168 on Place Mark Card—Page 32





## Washington Report

and given the necessary priorities by producers and distributors of the controlled materials.

On jobs carrying priorities, producers and suppliers must accept the order and give first preference on all materials other than those controlled.

### ● Migrating Industry Prefers Small Towns

Four Southeastern states which have attracted a great part of the migrating industrial plants report that industry prefers small towns as locations for new plants.

The reports, released by the Office of Area Development of the Department of Commerce show the following information:

**State A:** In 1959, 75% of the new plants were near towns of 10,000 or less population. In capital investment, however, the total outlay for new plants or plant expansions in all small towns was less than the total for all larger towns of over 10,000.

**State B:** During 1959, 43% of all new plants located in towns of 5,000 to 7,000. Over 20% located in towns of 10,000 to 20,000.

**State C:** Of the 163 new plants established during 1957-1959, 35 were in towns under 1000 and 79 in towns of 1000 to 10,000.

**State D:** Thirty-five percent of plant locations or expansions occurred in towns of less than 2500, 63% in cities of less than 10,000.

Some of the reasons why industry favors small town locations for new plants, according to these Southeastern states, include the desire to avoid congestion, opportunity to take advantage of untapped labor, attractive wage rates, availability of workers who can be easily trained, high productivity, desire to avoid large city competition for labor, and availability of large plant sites at reasonable costs.

Other advantages frequently cited: more leisurely living, greater friendliness of small town people, small town desire for and interest in industry, and the existence of development groups willing to help.—A. N. Wecksler

## Life in these excited states ...



### "WAM" PUMP finest you can buy



Highest pumping efficiency, with faultless corrosion resistance. Hard rubber casing and impeller; Hastelloy C shaft. 80 gpm. Bul. CE-55.

### THRIFTY-THROATED VALVES



Liquids never touch metal in Ace diaphragm valves! Rubber or plastic-lined cast iron, or solid plastic bodies. Sizes 1/2 to 6". Ask for facts.

### ACE-ITE

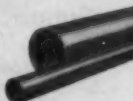
all-purpose toughie



High-impact, rubber-plastic, most economical for average chemicals. 1/2 to 6". Screw or solvent welded fittings. Valves 1/2 to 2". NSF-approved. Bul. 80A.

### RIVICLOR

ageless strength



All-purpose rigid PVC. Sched. 40, 80 & 120, 1/2 to 4". Threaded or socket-weld fittings. Valves 1/2 to 2". NSF-approved. Free Bul. CE-56.

## Why men of vision choose ACE equipment

Men with a weakness for profits somehow manage to keep equipment "on stream" full time with no corrosion shutdowns. You'll find they reach for Ace corrosion-engineered equipment time and again. Now nine kinds of Ace pipe ... plus pumps, valves, tanks, and special equipment to solve most any corrosion or contamination problem.

ACE chemical resistant equipment  
BY AMERICAN HARD RUBBER COMPANY

DIVISION OF AMERACE CORPORATION

ACE ROAD • BUTLER • N. J.

See ACE equipment in  
Chemical Engineering Catalog



For More Information Write No. 169 on Place Mark Card—Page 32





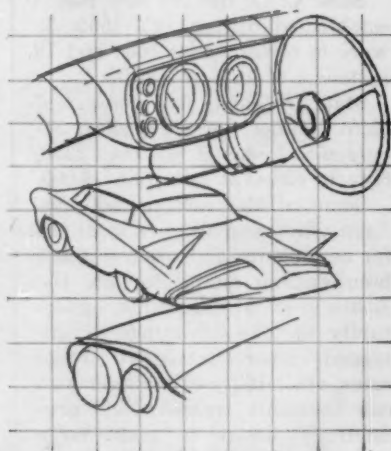
## Custom Made OSTUCO Tubing..... gets your product off the ground

OSTUCO tubing is the exact tubing you need for your product because OSTUCO Tubing is CUSTOM MADE for your product. Your order is manufactured to your own specifications to produce steel tubing especially for your application—the precise grade, analysis, size, shape, special anneal and tolerances best suited to your own needs.

Ohio Seamless Tube produces both seamless and electric welded steel tubing—is prepared to form many finished or semi-finished tubular parts to your designs.

To get the most from your next steel tubing order, use Custom Made OSTUCO TUBING. Contact your nearest Ohio Seamless representative, or send part drawings to the plant at Shelby, Ohio—Birthplace of the Seamless Steel Tube Industry in America.

Model illustrated built to 3.5 mm scale.



## OHIO SEAMLESS TUBE

*Division of Copperweld Steel Company • SHELBY, OHIO*

*Seamless and Electric Resistance Welded Steel Tubing • Fabricating and Forging*

SALES OFFICES: Birmingham, Charlotte, Chicago (Oak Park), Cleveland, Dayton, Denver, Detroit (Huntington Woods), Houston, Los Angeles (Lynwood), Miami, Mobile, New Orleans (Chalmette), New York, North Kansas City, Philadelphia (Wynnewood), Pittsburgh, Rochester, St. Louis, St. Paul, Salt Lake City, Seattle, Tulsa, Wichita

CANADA: Railway & Power Engr. Corp., Ltd.

EXPORT: Copperweld Steel International Company, 225 Broadway, New York 7, New York



# Purchasing Follow-up

## Daily Cargo Flights Link Newark, Atlanta

Air cargo has taken another step forward with the inauguration by Eastern Air Lines of scheduled "flying freighter" service.

Non-stop, all-cargo flights are made every business day between Newark, N. J. and Atlanta, Ga. High-speed, four-engine aircraft are used. They operate on timetables usually limited to passenger service.

Eastern has converted five of its former 88-passenger Super-C Constellations into a fleet of all-cargo planes. They are designed to link the principal manufacturing and marketing centers of the North, South, Southwest, and the Caribbean.

The planes have been equipped with big loading doors, 106" wide x 74" high; strongly reinforced floors; and special winches, capstans, roller tracks, and tie-down rings to insure efficient and safe-handling. The cargo cabins have a capacity of 4650 cubic feet and can carry over 34,000 pounds of freight.

In addition to the five flights per week in each direction between Newark and Atlanta, the freight routes will include New Orleans and Houston southbound—and these cities plus Mobile northbound. Other linkings include New York and Newark with Miami and San Juan, Puerto Rico; Chicago with Atlanta and Miami; and Miami with San Juan.

Included in the "flying freighter" service are door-to-door pick-up and delivery, reservations for space through local freight offices, and overnight delivery.

## Packaging Program Cuts Damaged Parts Cost 89%

A new packaging program has cut the cost of parts' damage by 89% at the Rocketdyne division of North American Aviation, Inc.

The saving resulting from the packaging program is substantial

because of the high dollar value of precision rocket engine parts. At the same time, the cost of packaging materials has been cut 6%. Additional savings are expected because the new system is based on reuse of standard packaging materials.

The new program includes a methods study of the movement of parts between manufacturing departments and plants, selection of standard containers and packing methods for parts classed according to durability, and the design of departmental packaging stations and plant packaging material depots.

Packaging materials now used are paper-overlaid veneer panels. Sizes of standard "modules" were calculated on an IBM 704 computer for interchangeable use in various container sizes. Assembled with special spring clamps, these low-cost panels can be repeatedly reused in various container combinations.

The modular panel system and other features of the program are

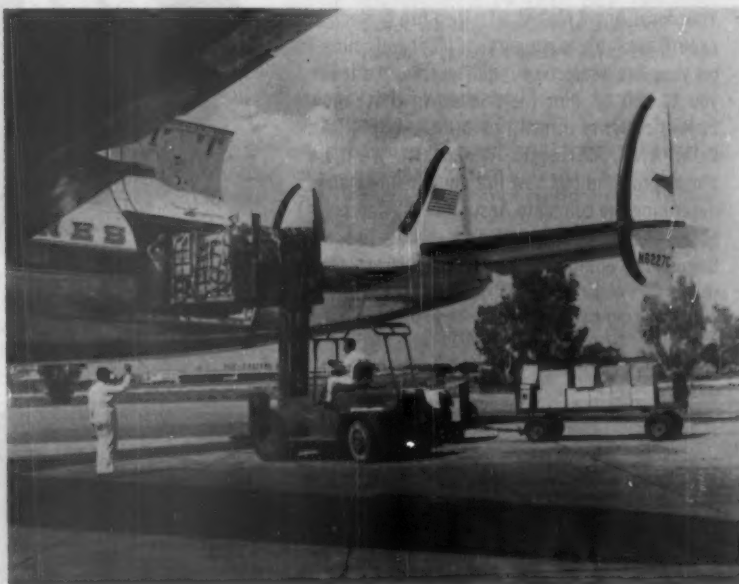
being extended to suppliers and subcontractors of Rocketdyne. In addition, the program is being applied to movement of material from the company to the Air Materiel Command at Norton Air Force Base.

According to Rocketdyne, Air Force ballistic missile contractors have been requested to put this type of assembly system into use whenever practical.

## Stainless Salesmen Train to Help P.A.'s

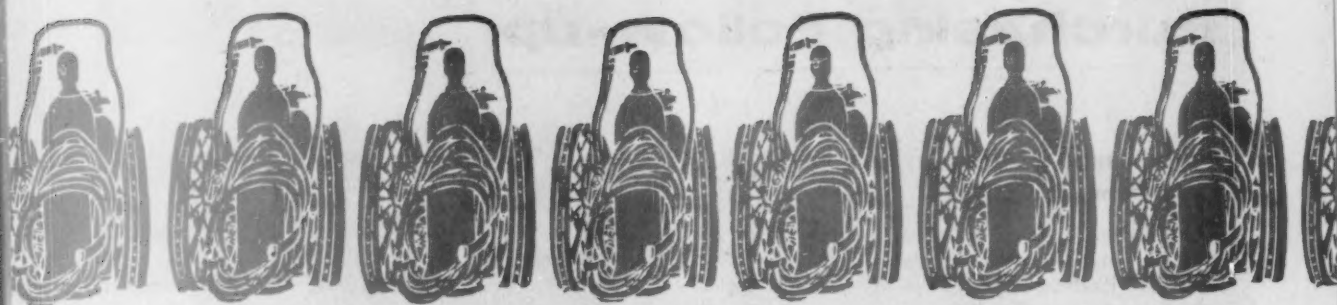
A \$1 million sales training program has been instituted by Republic Steel Corporation. Its object: help stainless steel distributors and their salesmen become qualified order-makers instead of just being order takers.

The program is called the Order Makers Institute (OMI). It represents a "vote of confidence in the growth of the stainless market picture in 1960-61: a growth both in the major markets of to-



Daily air cargo service between Newark and Southern cities is now underway. Super-C Constellations fly the route to give P.A.'s fast service between North and South along the East Coast.





This fire extinguisher, Ansul's HF 350-B, has just been granted the highest fire-killing rating ever awarded by Underwriters' Laboratories—160 B:C. It's an achievement symbolic of Ansul's continuing leadership in fire research... a milestone in the never-ending search for new ideas, new products for better fire protection.

Your local Ansul Man is a trained fire protection expert, available to survey your plant and counsel on your fire protection requirements. We invite you to call on him (he's listed in the Yellow Pages) or write directly to **ANSUL CHEMICAL COMPANY**, Marinette, Wisconsin. We'll be pleased to send our new fire equipment catalog, describing the complete Ansul line of hand portable, wheeled, stationary and mobile fire extinguishing equipment and automatic systems.



**ANSUL**

ANSUL CHEMICAL COMPANY • MARINETTE, WISCONSIN • FIRE EXTINGUISHING EQUIPMENT • WHEELERIZATION • PRETREATERS • INDUSTRIAL CHEM.



# Purchasing Follow-up

day and in the opening of entirely new market possibilities," says T. F. Patton, Republic's president.

OMI will concentrate on product information and industrial selling. Phase I includes a series of conferences for distributors and salesmen, aimed at providing useful information on stainless technology, fabrication, and application.

Phase II, which will run concurrently, is designed for purchasing agents and other potential customers of stainless steel. A group of color films will be made available in an effort to encourage greater use of stainless.

Distributor salesmen will learn how to assist P.A.'s with their service problems, with economic stock ordering procedures, and with suggestions for new stainless applications. Fabrication problems, proper selection, and end uses will also be covered.

## U.S. Spends Less For Foreign Aid Programs

Outlays for foreign military assistance and other aid programs by the federal government last year totaled \$5 billion. In the previous year, the corresponding figure was \$5½ billion, according to the Office of Business Economics of the Department of Commerce.

Among the items included in the assistance programs are: (1) transfers of goods and services and (2) payments of cash under the mutual security plan, farm products disposal, Export-Import Bank, and other government programs.

Of the \$5 billion, \$2 billion comprised military transfers and \$3 billion was nonmilitary assistance. Agricultural disposals covered one-third of the nonmilitary financing, while the Export-Import Bank comprised most of the remainder. The \$3 billion in economic assistance in 1959 was about the same as the previous year.

Actually, net assistance totaled only \$4 billion—because of de-

ductions for grants returned to the United States and for principal collections on credits. The major circumstance in this reduced figure was the extraordinary prepayment of almost half a billion dollars of principal on outstanding loans by a number of foreign nations.

Among the countries with accelerated repayments of credits were the United Kingdom and Germany—which paid back \$250 million and \$150 million, respectively.

Economic assistance programs continued to finance well over one-fourth of the value of 1959 agricultural exports. In addition to the transfers under the agricultural disposal programs, farm product exports were financed by the Export-Import Bank and through mutual security appropriations.

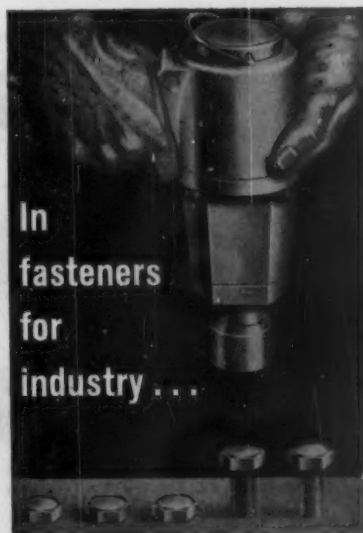
A decline was noted last year in nonmilitary assistance to Western Europe, which repaid more than it received. But the flow to the Middle East, Greece, Turkey, South Asia, and Africa again increased—totaling \$1.1 billion.

## Hot-Rolled Capacity Hits 113 Million Tons

Annual capacity of hot-rolled steel products in the United States has hit a record 113,785,590 tons, reports the American Iron and Steel Institute. This includes hot-rolled steel sheets, bars, plates, structural shapes, rails, and other products. The new figure is about 10.2 million tons higher than 1957, the last year finishing capacity was tallied.

Thirty-one states now have hot-rolling facilities, compared with 29 in 1957. The newcomers are Florida and Hawaii, each with 45,000 tons of bar capacity.

Ohio added more than 1.7 million tons to its hot rolling capacity between 1957 and 1960 to lead all other states in increases. Other large hikes in capacity were made in Pennsylvania, Indiana, Maryland, Illinois, Michigan, and California—all of which added more than one million tons of capacity.



In  
fasteners  
for  
industry...

## it's dependability that counts!

Yes, life often rests on the dependability of the fastener.

Whether for bridges, pressure piping, skyscrapers, railroads, transformers or tunnels... or even your personal car, it's the dependability of the fastener that counts. The fastener must be stronger... more dependable than the part.

When you visit our manufacturing facilities and control laboratories, you will see for yourself how we build dependability into our IMPACT-FORM'D nuts, bolts and screws.

IMPACT-FORM'D Screw and Bolt fasteners are produced to customer demand every day:

- free- or interference-fit rail bolts
- high strength heat treated bolts for heavy construction
- close tolerance components for machinery
- screws for electronic equipment and accessories

Whether you follow industry standards or have your own specifications, IMPACT-FORM'D Screw and Bolt fasteners have the dependability you need.

VMA 6097

SCREW AND BOLT CORPORATION  
OF AMERICA A.O. Box 1708  
Pittsburgh 30, Pa.

DIVISIONS: Pittsburgh  
Gary • Southington Hardware  
American Equipment



America's Most Complete Line of Industrial Fasteners

For More Information Write No. 172  
on Place Mark Card—Page 32

For More Information about ad on facing page  
←Write No. 171 on Place Mark Card—Page 32

JUNE 20, 1960



## Experience—the added alloy in Allegheny Stainless



## Sample pages from A-L's new free booklet on design

"Design and Allegheny Stainless" is illustrated page after page with hand-picked examples of good design in the gleaming metal.

Twenty-four photographs and drawings in full color, twenty-six in dual color and black and white become a showcase of the versatility of stainless.

The examples are presented with text in terms of Function, Shape, Texture and Color. They cover

Packed with actual examples of good design—and ideas for future applications



# ALLEGHENY LUDLUM

Export distribution: AIRCO INTERNATIONAL

EVERY FORM OF STAINLESS . . . EVERY HELP IN USING IT



many fields from automotive parts to holloware for the home . . . to open new horizons for the designer.

There is a working outline of types and properties in the many grades of Allegheny Stainless. Some of the new textures illustrated will interest the designer looking for new effects.

Write for your copy of "Design in Allegheny Stainless Steel"—without cost or obligation. Allegheny Ludlum Steel Corporation, Oliver Building, Pittsburgh 22, Pa. Address Dept. P-6-2.



## Purchasing Follow-up

### Sales of Industrial Electronics to Rise

Shipments of heavy electrical apparatus are expected to rise in the last half of 1960, says Standard & Poor's.

After an extended period of slack business, new orders have been picking up since around mid-1959. Total sales of industrial electronics this year are anticipated to rise well above the peak \$1.6 billion of last year.

Among the reasons cited for these prospects are: the rising trend of capital spending by industry, increasing emphasis on automation, and frequent introduction of new products in many major areas—including automatic data processing, test and measuring instruments, and new devices for control.

### Chamber of Commerce Hits Minimum Wage Rise

The proposed 25 cent increase in the minimum wage being considered by Congress might touch off a wage-price spiral even larger than those which have followed union wage increases, the Chamber of Commerce of the United States warned Congress.

#### Could Raise Prices

The proposal to increase the minimum to \$1.25 an hour, from \$1, is in size and coverage several times larger than any increase enacted, the Chamber said. The increase would raise the rates of one out of every ten persons (7 million) in the work force. In retail stores and service trades (like dime stores and auto garages), many of which would be covered for the first time, business men would have to raise pay for almost one out of every five employees (3.2 million), the Chamber maintains.

Wages, as well as being income, are costs, the Chamber pointed out. The higher costs that a \$1.25 minimum would force on business could result in higher prices in some businesses.

# "Call FOSTER for Rail"...Get Relayers PLUS



Installing or expanding in-plant trackage? Foster will deliver Quality Relaying Rail at lower cost . . . "plus" all necessary new track accessories, switch material—even the track tools to do the job. To help select the materials best suited to your job, call the Foster Track Specialist.

You will save on freight from Foster's nationwide warehouses, all of which stock all sections of relaying rail "plus" new rail for crane runways and specialized applications.

Another "plus": Foster's Track Inspection Kit, which illustrates all the elements needed for an efficient industrial siding. It's a real help for proper track maintenance.

Write L. B. FOSTER CO. for free Track Kit PA-6 Pittsburgh 30, New York 7, Chicago 4, Houston 2, Los Angeles 5, Atlanta 8, Cleveland 35.



## *Faster From Foster*

Pipe • Rental Steel-Sheet Piling • Pipe Pile • Rail

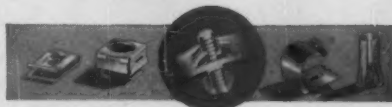
For More Information Write No. 174 on Place Mark Card—Page 32



Speed up the assembly of capacitor clips to electronic equipment with this new Tinnerman SPEED CLIP. The "heel-and-toe" fastening feature permits the clip to slide into locking position in holes punched in metal, fiber or plastic as easily as your foot slides into a shoe. Once locked in place, the clip stays put, yet can be easily removed and reused over and over again. No riveting, welding or special tools required—no screws to start, no parts to loosen under vibration!

Samples and prices of these SPEED NUT brand fasteners are available from your Tinnerman sales engineer. If he isn't listed in your Yellow Pages, write to:

**TINNERMAN**  
*Speed Nuts®*

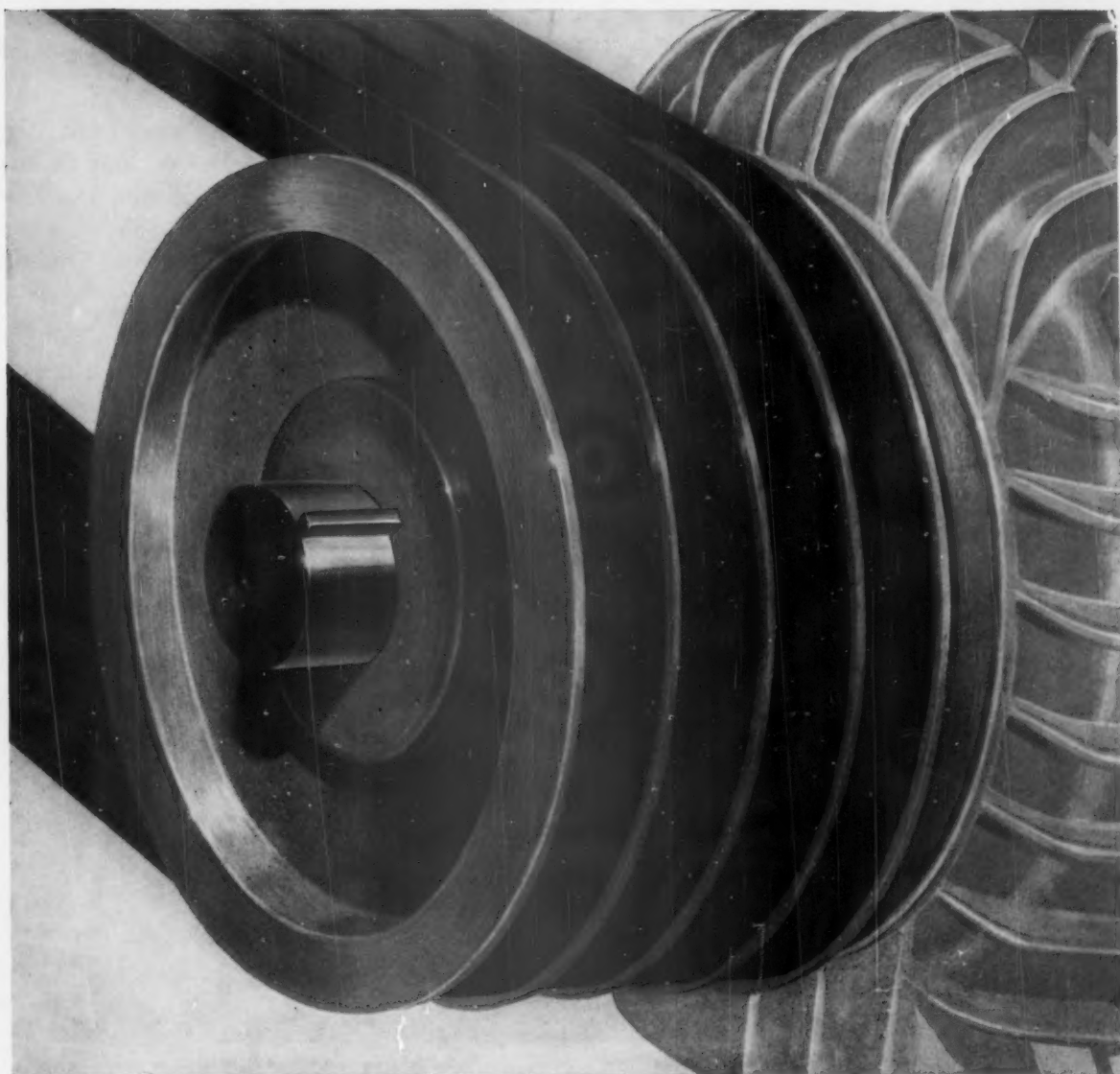


**FASTEST THING IN FASTENINGS®**

REAT BRITAIN: Simmonds Aerocessories Ltd., Treforest, Wales.  
urenes (Seine). GERMANY: Mecano-Bundy GmbH, Heidelberg.



# Get sure, easy belt matching!



## Insist on V-belts reinforced with **DACRON**<sup>®</sup> POLYESTER FIBER

**You'll** put an end to matching problems when you ask for V-belts reinforced with Du Pont "Dacron"<sup>\*</sup> polyester fiber.

Available at no extra cost, V-belts reinforced with Du Pont "Dacron" have outstanding dimensional stability—won't shrink or stretch in storage. This assures positive matching for fast installation . . . cuts down

time for adjustments . . . reduces costly inventories. And these belts last up to 50 times longer, too!

Remember, to be sure of the very best, longest-lasting V-belts—insist on V-belts reinforced with "Dacron". Du Pont makes the "Dacron" fiber used by belt manufacturers in producing their finest-quality V-belts.

Enjoy "The Du Pont Show With June Allyson"—Monday Nights—CBS-TV

**FREE BOOKLET:** "Du Pont 'Dacron' Sets New Standards for V-Belt Performance". Write: E. I. du Pont de Nemours & Co. (Inc.), 31E Centre Road Bldg., Textile Fibers Dept., Wilmington 98, Del.

<sup>\*</sup>"Dacron" is Du Pont's registered trademark for its polyester fiber.



REG. U.S. PAT. OFF.

Better Things for Better Living . . . through Chemistry

For More Information Write No. 176 on Place Mark Card—Page 32

JUNE 20, 1960

For More Information about ad on following page  
Write No. 177 on Place Mark Card—pg. 32→

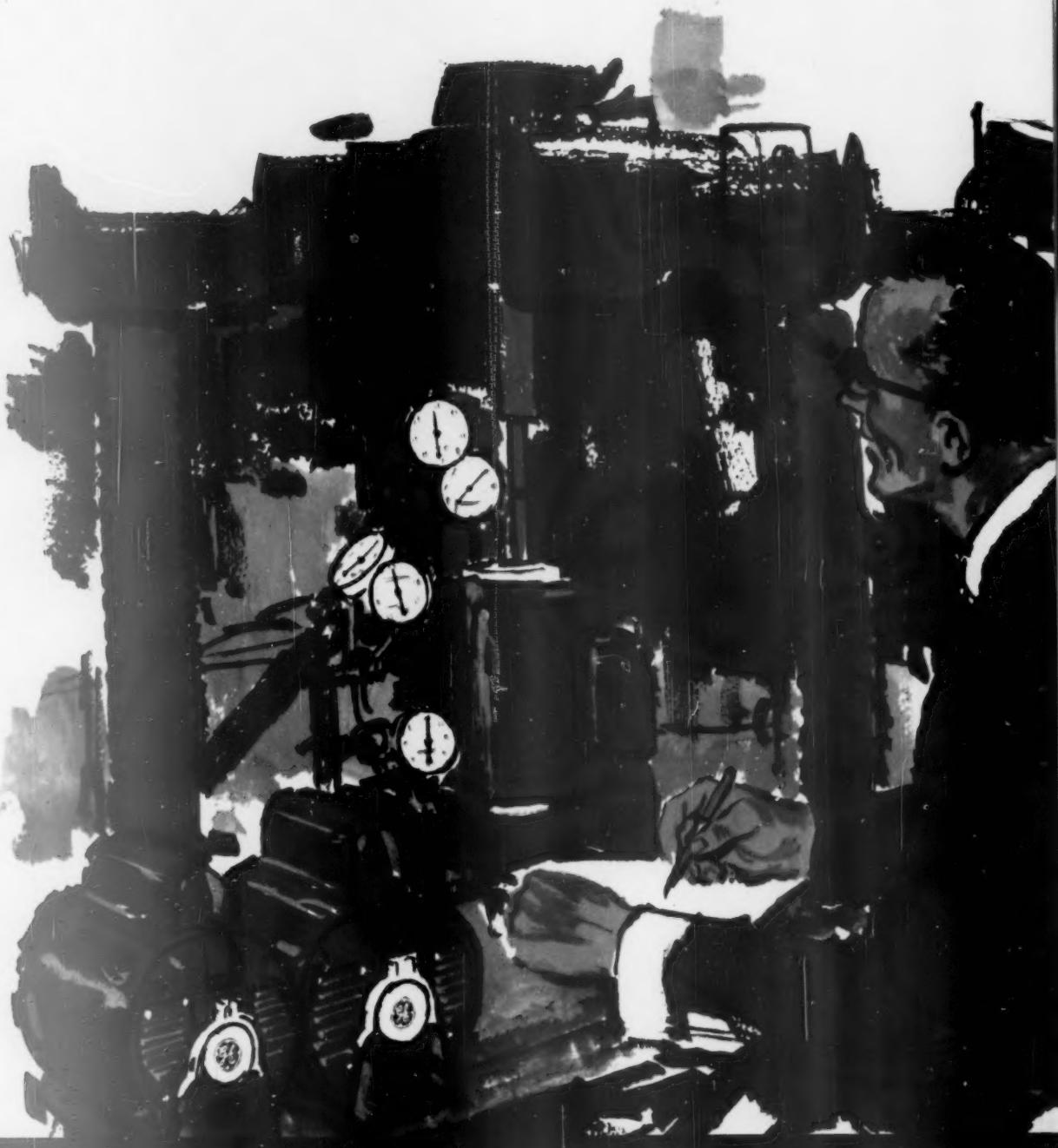
33



# You get MORE THAN A MOTOR with General Electric's

## **Years-Ahead**

Form G leadership among fhp motors isn't accidental. We work hard at it, constantly improving, constantly innovating. We've found it's the best way to help our customers keep ahead of the changing demands in their industries. It's good business on our part. It's good business on your part too . . . to make sure you get the advantages a years-ahead motor can offer your product.





Form G...for example...

## **Design Leadership**



FOR A REVIEW of several years-ahead design features of the Form G fhp motor, and some good reasons why it offers you MORE THAN A MOTOR, see the next page.

**GENERAL**  **ELECTRIC**



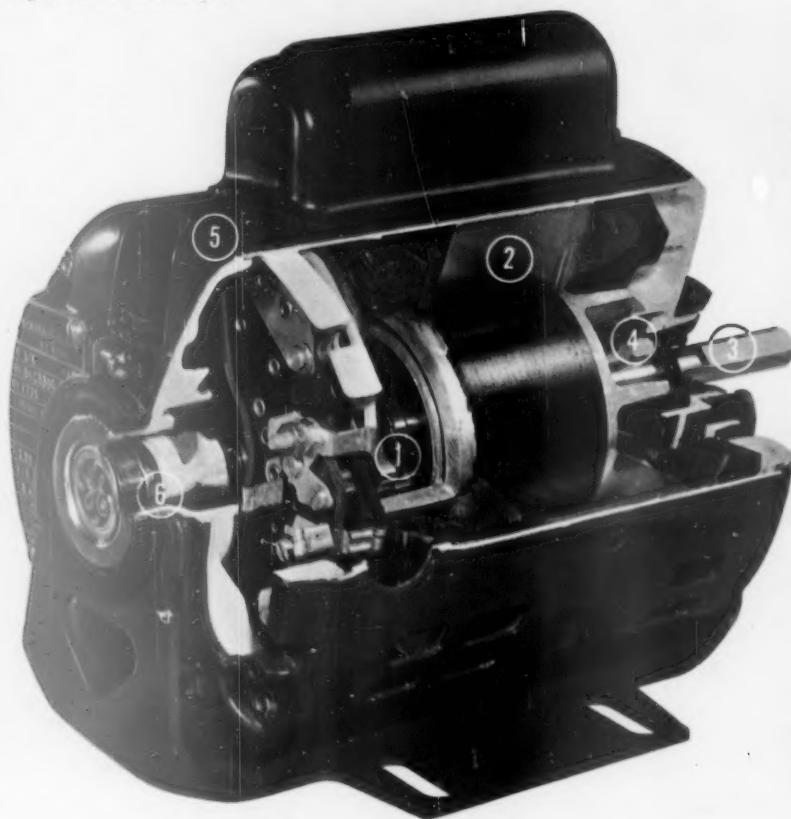
## These years-ahead Form G motor features mean long life, reliable performance

**1. QUIET SWITCH**—specially-designed composition washer in Form G motors cushions start-stop click; maintains positive snap-action; has been tested to last 3,500,000 operations.

**2. LONG-LIFE STATOR**—heavy-duty stator bonding dip and Mylar\* insulation protect against damage caused by heat, stress, moisture. Stator clamps provide additional rigidity.

**3. RUST-RESISTANT SHAFT**—special gunmetal-like treatment of motor shaft resists rust and corrosion, simplifies product service. Fans, pulleys, and couplings are easy to remove.

\*Reg. Trademark of Du Pont Co.



**4. LONG-LIFE LUBRICATION**—Over 50% more oil than in old-design motors and an efficient oil retention system contribute to motor's doubled lubrication life; cut maintenance.

**5. ACCURATE ALIGNMENT**—disk-type end shield, heavily ribbed for rigidity, places rabbet and bearing in same plane, provides accurate bearing alignment, long motor life.

**6. THRUST PROTECTION**—interlocking washer assembly withstands normal thrust from any direction, regardless of motor angle; also acts as an oil seal for long motor life.

## Only General Electric Form Gs give you MORE THAN A MOTOR

**1. YEARS-AHEAD DESIGN LEADERSHIP**—consistent leadership by G.E. keeps Form G customers "out front".

**2. EASE OF ASSEMBLY**—Form G motors provide assembly-line savings in time and money.

**3. EXPERT APPLICATION AID**—G-E engineers are always available to help solve unusual motor applications.

**4. ON-TIME DELIVERY**—multi-plant facilities assure you reliable, prompt delivery of the exact motors you need.

**5. VERSATILITY PERSONIFIED**—a Form G motor can meet almost any design requirement.

**6. FAST, LOCAL SERVICE**—a nationwide network of G-E Electric Motor Service Stations means service is always close at hand.

**7. QUALITY CONTROL**—every Form G motor is thoroughly tested at all stages of production to assure you long, dependable performance.

Make sure you get MORE THAN A MOTOR when you select fhp drives for your product . . . choose General Electric Form G motors, available in NEMA 48 and 56 frames. For more information contact your nearby General Electric Apparatus Sales Office or write Section 702-108, General Electric Co., Schenectady 5, N. Y.

**GENERAL  ELECTRIC**



# OHIO RUBBER

"CUSTOMEERED\* COMPONENTS BASIC TO INDUSTRY"



## ORCO IDEA PARTS shape up OEM designs—profitably!

### OHIO RUBBER IS THE GOOD SOURCE FOR THE OEM!

ACROSS THE BOARD in industry, ORCO IDEA PARTS offer the design engineer product quality evolved from Ohio Rubber's years of experience in supplying "Customeerred"\* components for outstanding original equipment manufacturers nationwide.

ORCO CUSTOMEERING\* is geared to cut production costs—to deliver a better part. And it goes to work for you as soon as performance requirements are checked, a materials recipe is formulated, expense-shaving design

modifications, if necessary, suggested. The full scope of ORCO integrated design, research and practical ingenuity in custom-manufacture of rubber, synthetic rubber, silicone rubber, polyurethane, and flexible vinyl components is focused on your component.

ORCO CAPACITY offers the facilities of four modern plants. These include design, building, and maintenance of precision molds and dies . . . perma-

nent bonding-to-metal . . . compression and transfer molding . . . extruding of all shapes, sizes, and types . . . complete laboratory facilities . . . statistical quality control . . . coordinated production control.

**SUGGESTION** — send for ORCO Bulletin 715 for the complete money-saving story of "Customeeing". It's yours for the asking!

\*Trademark of The Ohio Rubber Company



DE-160



## THE OHIO RUBBER COMPANY

General Office • **WILLOUGHBY, OHIO** • Whitehall 2-0500

A DIVISION OF THE EAGLE PITCHER COMPANY





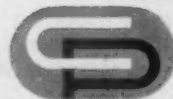
It's easy and economical to add punch to your packages, color to your cartons with appealing Safetex Printed Tape. For very few extra pennies, your *exclusive* Safetex Printed Tape design can advertise your company or product at a low, low cost . . . discourage pilferage of shipments . . . be helpful in tracing lost shipments . . . make in-warehouse identification easier for your customers . . . be effective in color coding production runs. Appealing Safetex Printed Tape is available in one, two and three color printing. On any of 10 handsomely colored



APPEALING

stocks, in all popular widths and weights. For proof of Safetex Printed Tape quality and popularity, write for sample folder or call your Safetex distributor.

**SAFETEX PRINTED TAPE**



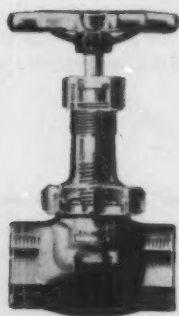
CENTRAL PAPER COMPANY  
MENASHA, WISCONSIN

Manufacturers of Safetex superstandard gummed tape, Security standard grade gummed tape, Glassweb, Glasstex and Glasline reinforced tapes, Holiday Christmas wrap and tape, Triad matched bags, wrap and tape, adding machine rolls





**The LUNKENHEIMER Valves in your competitor's plant are  
the valves that cost you most!**



- BRONZE
- IRON
- STEEL
- PVC



With quality Lunkenheim Valves in his plant, your competitor enjoys far fewer leakage, production and maintenance losses. Thanks to these savings, he lowers his manufacturing costs . . . and makes more profit. Why give him this important advantage? Install Lunkenheim Valves . . . famous for quality and performance for nearly a century. The Lunkenheim Co., Cincinnati 14, Ohio.

You can't find the cost of a valve on a price list.

**LUNKENHEIMER®**  
THE ONE *Great* NAME IN VALVES

L-400-6A

For More Information Write No. 180 on Place Mark Card—Page 32

For More Information about ad on following  
page Write No. 181 on Place Mark Card—pg. 32→

JUNE 20, 1960

39



Measurement / Control ideas for cutting costs:



## HOW TO SAVE TAX DOLLARS THESE DAYS

Profit these days always has to be concerned with the phrase "after taxes." At a large process plant sewage taxes were being paid on the basis of all water consumed. But a sizable portion of this water was actually used as "raw material" for finished products and never reached the sewage lines. A Rockwell engineer suggested putting liquid meters\* on process units to accurately record the water consumed in production. By proving that large quantities of water going into the plant were not discharged as waste, sewage tax bills were cut drastically.

This is just one example of the many ways a Rockwell field engineer can help you track down new and

different ways to cut plant costs with measurement and flow control devices. Rockwell has more experience than any other single source for this kind of cost cutting. That's because Rockwell, as the world's largest manufacturer of a complete line of meters, valves and regulators, has been asked to solve more problems.

Wherever liquids, gases or slurries flow through pipes in your plant, you probably can save time, money or materials with new or improved methods of measurement and control. It's easy to find these cost cutting opportunities—just have a Rockwell field engineer visit your plant by sending in the coupon today.

\* Rockwell makes meters to measure a variety of liquids—water, oil, chemicals and other industrial fluids.

---

# ROCKWELL

The leading single source for Measurement / Control products and ideas





## HOW MUCH COULD YOU SAVE?

There is hardly a plant anywhere—including yours—where the right application of the right measurement and control methods and equipment won't produce savings many times the modest cost involved. Certainly it's worth investigating—especially since it will cost you nothing to talk to a Rockwell field engineer. Simply mail the coupon now.

SEND COUPON TODAY

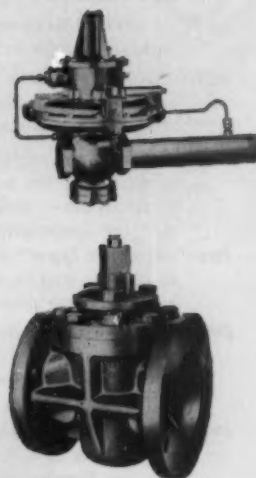
### "IN-PLANT" METERING: LIQUIDS AND GASES

Rockwell gas and liquid meters, properly applied, can improve quality control, sharpen cost control, and prevent waste in almost every plant department. A Rockwell Field Engineer can help you find *where* meters will cut costs . . . and Rockwell has a complete line of meters to measure practically anything that will flow through pipe.



### CONTROLLING PIPED MATERIAL: LIQUIDS AND GASES

More efficient control of all the material flowing through pipes in your plant is a positive step in cutting costs. There are new applications and new ideas for using gas pressure regulators and valves that will stop wasteful, inefficient, and dangerous handling of fuels, production fluids, and products. A Rockwell Field Engineer can show you *where* and *how*.



MEASUREMENT AND CONTROL DEVICES

all fine products by

**ROCKWELL**



Rockwell Manufacturing Company, Dept. MC3F, Pittsburgh 8, Pa.

☐ Please have a Rockwell Field Engineer call me for an appointment.

Please send literature on ☐ Controlling gas pressures; ☐ Valving gases, liquids and slurries; ☐ Measuring liquids; ☐ Measuring gases.

I am concerned primarily with ☐ Light & Heavy Metal Fabricating ☐ Basic Chemical Production ☐ Chemical Processing ☐ Food, Drugs & Tobacco

☐ General Manufacturing Operations ☐ Petroleum Processing

☐ Others: \_\_\_\_\_

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ Zone: \_\_\_\_\_ State: \_\_\_\_\_



*new... low cost... for all vertical screw driving operations...*

# STRIPPIT ZIPP SCREW FEEDERS

*save time... cut costs... reduce worker fatigue*

**save 2 to 25 seconds per piece per station** — the new Strippit Zipp Screw Feeder completely eliminates production time lost in manual screw placement.

**reduce errors and rejects** — worker fatigue with its resulting loss of production efficiency is cut to an absolute minimum.

**automatically feeds and drives all type screws** — will feed and drive slotted, socket, clutch, hex or Phillips head screws even where clearances are extremely limited.

**high efficiency, long run production** — these units are particularly effective for the assembly of appliances, electronic and electrical components — and any application requiring continuous vertical screw driving operations.

**for "straight type" air screw drivers** — Zipp Screw Feeders are designed to fit most makes of "straight type" air screw drivers. They are factory set to fit your present or new equipment.

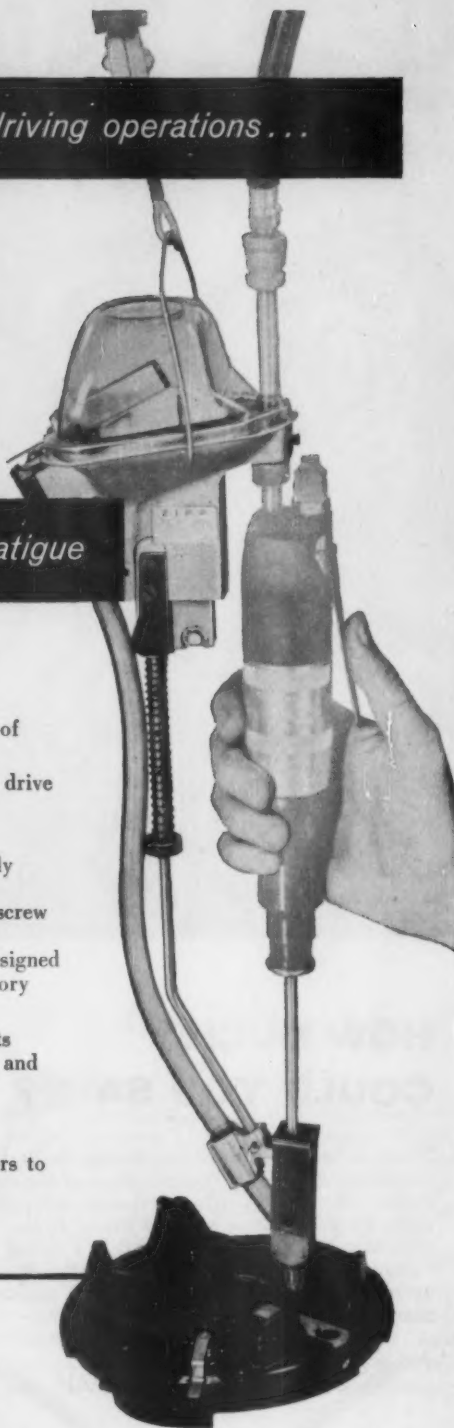
**precision built for accurate operation** — the screw holding collets of these machines are precision machined to hold screws accurately and firmly for finding screw holes. There are no delicate mechanisms to get out of order.

**low cost, high speed, ease of operation** — all contribute to production line economies that enable Strippit Zipp Screw Feeders to pay for themselves in from 30 to 120 days.

**WRITE FOR FULL DETAILS** — new illustrated literature, complete specifications, price and delivery.



**STRIPPIT ZIPP SCREW FEEDERS MOUNT ANYWHERE** — on a balancer, fixed position stand, kick press lift table, swing arm tool mount and numerous other ways to meet your individual requirements.



## WALES STRIPPIT INC.

229 Buell Road • Akron, New York

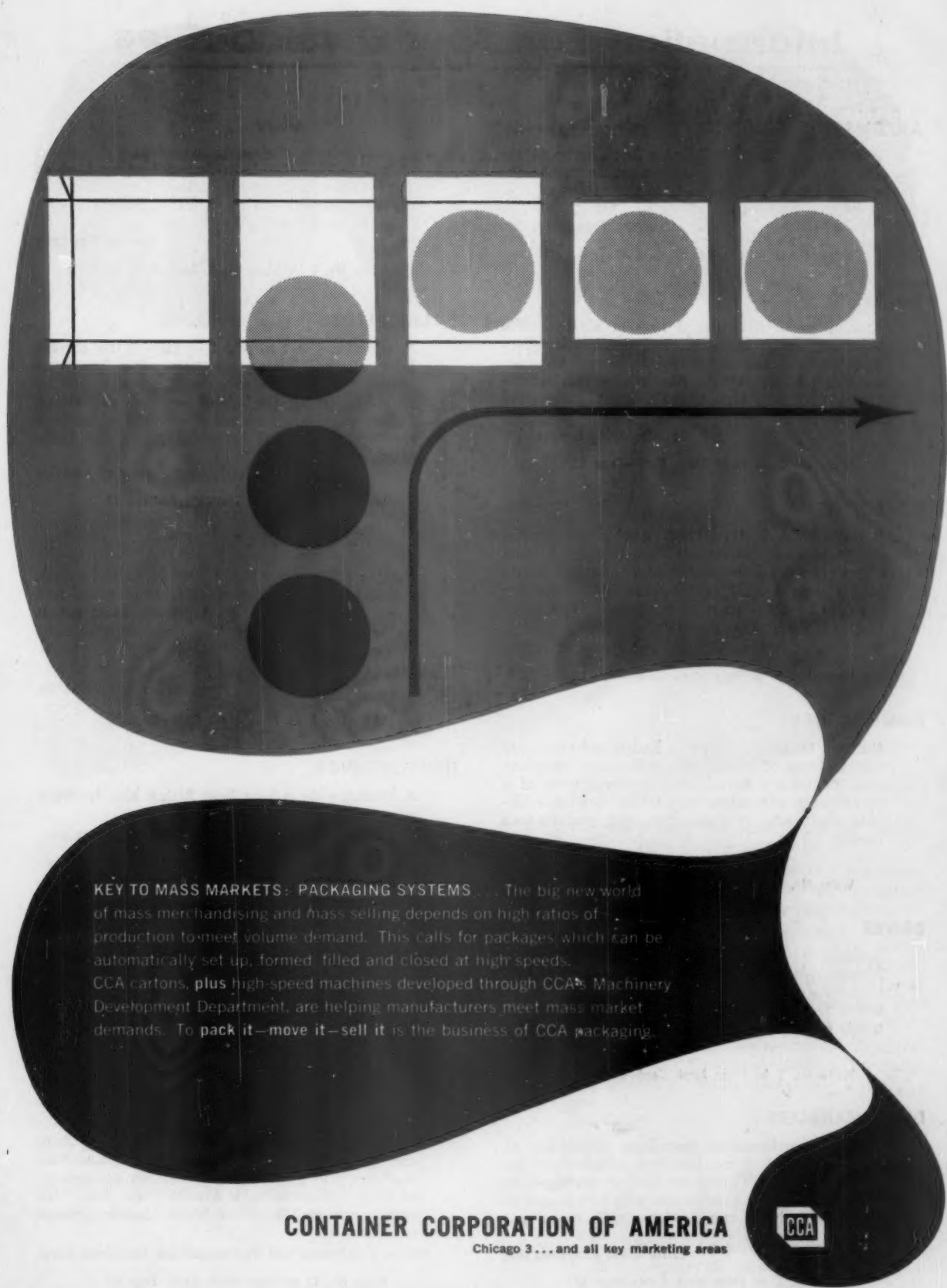
In Canada: Strippit Tool & Machine Company, Brampton, Ontario

For More Information Write No. 182 on Place Mark Card—Page 32

For More Information about ad on facing page Write No. 183 on Place Mark Card—pg. 32→

PURCHASING





**KEY TO MASS MARKETS: PACKAGING SYSTEMS.** . . . The big new world of mass merchandising and mass selling depends on high ratios of production to meet volume demand. This calls for packages which can be automatically set up, formed, filled and closed at high speeds. CCA cartons, **plus** high-speed machines developed through CCA's Machinery Development Department, are helping manufacturers meet mass market demands. To **pack it—move it—sell it** is the business of CCA packaging.

## **CONTAINER CORPORATION OF AMERICA**

Chicago 3 . . . and all key marketing areas



**Folding Cartons, Shipping Containers, Sefton Fibre Cans, Molded Plastic Products, Point-of-Purchase Displays, Paperboard**



# Information For Your Catalog Files

## AUTOMATION EQUIPMENT

A bulletin on TransferRobot, a flexible and versatile piece of automation equipment. Describes design and operation, as well as the means of programming and set-up.

**U.S. Industries, Inc.**

Write No. 1 on Place Mark Card—Page 32

## BOOSTERS

Catalog #116 describes a line of air-hydraulic interchangeable boosters. The handbook offers hydraulic pressure and flow data, as well as tables for making calculations. Also covers special features, including baffles, seals, sight gages, and area ports.

**S-P Manufacturing Corporation**

Write No. 2 on Place Mark Card—Page 32

## CAPACITORS

Bulletin GEA-7061 contains detailed information on 50-kilovar capacitors. The 16-page catalog offers graphs, construction features, outline drawings, ratings, weights, dimensions, and group fusing data for single-row, three-segment, and twin-cluster pole-type equipments.

**General Electric Company**

Write No. 3 on Place Mark Card—Page 32

## COMPRESSORS

Bulletin 16B6104A describes design and construction features of multi-stage centrifugal compressors. Includes a keyed cross-sectional view of a horizontally split casing unit, tables showing available shaft seal arrangements, and performance curves.

**Allis-Chalmers**

Write No. 4 on Place Mark Card—Page 32

## DRIVES

Bulletin #101 describes the operation and performance of electronic Select-a-Spede drives. Includes data on drives ranging from  $\frac{3}{4}$  hp to 4 hp, which feature a d-c motor mounted on an electronic control panel.

**Louis Allis Co.**

Write No. 5 on Place Mark Card—Page 32

## DRUM HANDLERS

A four-page brochure describing advantages of fibre and steel drum handling attachments for fork lift trucks. Twelve on-the-job photographs illustrate how the handler can grip two drums at one time. Includes specifications, applications, and prices.

**Little Giant Products, Inc.**

Write No. 6 on Place Mark Card—Page 32

## FEEDERS

A data sheet containing complete information about Model F-212 light-duty vibratory feeders. The illustrated sheet also offers specifications of the units, which can be operated from 115 volt, 230 volt, or 460 volt, 60 cycle a-c.

**Syntron Company**

Write No. 7 on Place Mark Card—Page 32

## FILLER ALLOYS

A selection chart to assist in buying the correct filler alloys. Makes choices possible based on parent metal combinations and common service requirements demanded of welded assemblies. Parent metal combinations of wrought alloys currently recommended for welding are also indicated.

**Aluminum Company of America**

Write No. 8 on Place Mark Card—Page 32

## GAGES AND VALVES

Catalog #376 covers liquid level gages and valves. Includes standard and special function types. Has dimensional drawings, photographs, construction features, and materials. The eight-page bulletin also offers a comprehensive table of sizes, specifications, and standard and optional features.

**Jerguson Gage & Valve Co.**

Write No. 9 on Place Mark Card—Page 32

## HOSE FITTINGS

A brochure describing hose fitting kits. Includes prices, illustrations, and descriptions.

**Parker-Hannifin Corporation**

Write No. 10 on Place Mark Card—Page 32

## INDUSTRIAL HOSES

A catalog describing a line of industrial hoses. Includes air, water, polypurpose, agricultural spray, welding, paint spray, booster, and farm tank hoses. Gives information on applications, cover, reinforcement, tube, lengths, and packaging.

**Swan Rubber Company**

Write No. 11 on Place Mark Card—Page 32

## INDUSTRIAL X-RAY UNITS

A 12-page booklet containing engineering facts and specifications for industrial X-ray units. The brochure also gives data on auxiliary equipment, such as tube-stands, hydraulic tube carts, jib cranes, and mobile chassis units. Includes photos and drawings.

**Philips Electronics and Pharmaceutical Industries Corp.**

Write No. 12 on Place Mark Card—Page 32





## **POSITIVE DUPLICATION—EVERY TIME!**



These "fingerprints" of a tree will always duplicate characteristics by which an expert can positively identify all cross-sections from the trunk of that tree. But you don't have to be an expert to get Positive Duplication—when you use these CINCINNATI ® SEGMENTS, and all CINCINNATI GRINDING WHEELS.

### **YOU GET (PD) UNIFORMITY**

Cincinnati supplies you with wheels of uniform excellence, because of the unique ® manufacturing process which involves 36 separate and unvarying quality controls.

Every step, from grain mix to final inspection, is directed to uniformity of product. For example, while vitrified wheels are being fired, automatic recording analyzers keep sampling the kiln atmosphere to maintain desired oxygen content throughout the firing process.

### **RESULT: DEPENDABLE PERFORMANCE**

You can depend on ® WHEELS because each reorder

wheel gives you exactly the same good job as the original.

Using ® WHEELS you will find production going up, and costs going down . . . to stay! This is the promise—and the performance—of Positive Duplication.

### **CALL CINCINNATI TODAY**

Solve your grinding problems with the help of specialists trained by the Cincinnati Milling Machine Company. Their wide experience in job set-ups and grinding operations is at your service.

Just call your CINCINNATI ® GRINDING WHEELS Distributor or contact Cincinnati Milling Products Division, Cincinnati 9, Ohio.



**POSITIVE DUPLICATION**

**CINCINNATI**  
GRINDING WHEELS

\*Trade Mark Reg. U.S. Pat. Off.

A PRODUCTION-PROVED PRODUCT OF THE CINCINNATI MILLING MACHINE CO.

For More Information Write No. 184 on Place Mark Card—Page 32

**JUNE 20, 1960**

**45**





"Our previous hose gave out after only 1200 to 1400 starts ...

## Thermoid-Quaker Jet-Starter Hose good as new after 3500 starts"

says Mr. B. V. Darress, Maint. Supr. Pan American World Airways.

Jet-starter hose has to take unusual abuse: transmit hot air up to 500°F at up to 600 MPH under sub-zero conditions ... withstand dragging over abrasive surfaces. Yet it must be light-weight and flexible ... easy to handle and coil—and it can't kink, collapse, burst or flake off inside.

Thermoid-Quaker Jet-Starter Hose meets these strict specifications and has proved its worth with Pan American World Airways and the U. S. Air Force. According to Mr. B. V. Darress of PanAm, previous hose became unserviceable after only 1200 to 1400 starts. Thermoid-Quaker hose has already outlasted former hose by three to one and still looks like new!

Service like this is important to both commercial and military jet operations. In fact, this hose was developed for military use. "Dacron" cross-braid construction distributes the load evenly, prevents kinking; and the seamless silicone rubber tube and bonding layer resist heat and flaking. Yet the hose remains flexible in any kind of weather.

Get complete information, including Technical Data from your Thermoid Division industrial distributor, or write *Thermoid Division, H. K. Porter Company, Inc., 200 Whitehead Road, Trenton 6, New Jersey.*

**THERMOID PORTER DIVISION**

**H. K. PORTER COMPANY, INC.**

PORTER SERVES INDUSTRY with steel, rubber and friction products, asbestos textiles, high voltage electrical equipment, electrical wire and cable, wiring systems, motors, fans, blowers, specialty alloys, paints, refractories, tools, forgings and pipe fittings, roll formings and stampings, wire rope and strand.

For More Information Write No. 185 on Place Mark Card—Page 32

## Catalog Files

### LEVELERS

Bulletin 602 gives dimensional information and applications of leveling screws. Covers three styles, including the FB deluxe cushioned leveler in thread sizes from 5/16-18 to 1/2-13.

**Ohio Nut and Bolt Company**

Write No. 13 on Place Mark Card—Page 32

### MOTORS

Bulletin 270B describes various motor applications. The 16-page catalog outlines characteristics and includes up-to-date information on designs.

**Century Electric Company**

Write No. 14 on Place Mark Card—Page 32

### PREFORMS

A 20-page booklet on design considerations of preforms. Covers edgewound and blanked washers, as well as curved washers and shims. Various applications are illustrated. The aluminum brazing preform processes are described, while the importance of flux is outlined.

**Lucas-Milhaupt Engineering Company**

Write No. 15 on Place Mark Card—Page 32

### STAPLERS

A six-page booklet on automatic electric staplers. The two-color illustrated brochure shows various applications of the staplers.

**Staplex Company**

Write No. 16 on Place Mark Card—Page 32

### V-BELTS

Bulletin M220 describes design features and performance advantages of V-belts. Includes specifications for standard and non-standard belts sizes. Also has a condensed pre-engineered selection table to help determine the correct size for electric motor drives.

**Raybestos-Manhattan, Inc.**

Write No. 17 on Place Mark Card—Page 32

**PURCHASING**



they turn in top performance to turn out top results

## SIMONDS CENTERLESS GRINDING WHEELS

top rated for fast, free-cutting . . .

high production . . . long wheel life



"Ground 70,000 pieces compared to 45,000." "Held corners and shape better than wheels previously used." "Entirely satisfactory. Gave excellent finish." These comments from users\* are some reasons why Simonds Centerless Wheels are rated superior for job-to-job dependability . . . and good reasons why *your* way to accurate, lower cost centerless grinding may lie in switching to Simonds Wheels. Write for bulletin ESA 55.

\*Names on request.



**SIMONDS**  
ABRASIVE CO.

PHILADELPHIA 37, PENNA.

COUNT ON / YOUR SIMONDS DISTRIBUTOR  
FAST SERVICE • LOCAL STOCKS

### REGULATING WHEEL

Rubber bonded feed wheels exceptionally long wearing and have good traction . . . perfect mate for the Simonds Grinding Wheel.

### GRINDING WHEEL

Job-proved Grain and Grade Specifications for all materials. Karvit bushed non-metallic center hole for better mounting and balance.

WEST COAST PLANT: EL MONTE, CALIF.—BRANCHES: CHICAGO • DETROIT • LOS ANGELES • PHILADELPHIA • PORTLAND, ORE. • SAN FRANCISCO  
SHREVEPORT — IN CANADA: GRINDING WHEELS DIVISION, SIMONDS CANADA SAW CO., LTD., BROCKVILLE, ONTARIO • ABRASIVE PLANT, ARVIDA, QUEBEC

For More Information Write No. 186 on Place Mark Card—Page 32

JUNE 20, 1960

47



emblem of a new era . . .





# . . in die casting

**IT'S TIME TO RE-EVALUATE YOUR DIE CASTING SOURCES!**

Periodically American industry gains another springboard for progress through the reorganization of a long-established firm to provide increased capabilities, better services and improved products. Precision Castings Company, Division of Precasco Corporation, one of the Fulton Industries, Inc. group offers an outstanding example.

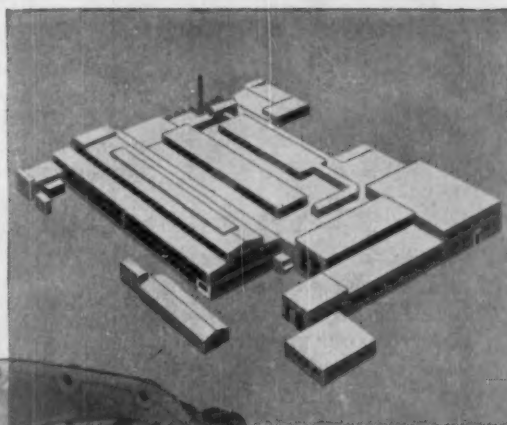
The aggressive programs being carried out at Precision lead the way into a new era of die casting... and a new era of benefits.

**A streamlined corporate structure** puts fresh emphasis on customer service. Relocated field offices extend this service. Accelerated research is finding ways to meet the requirements of the '60's, and beyond.

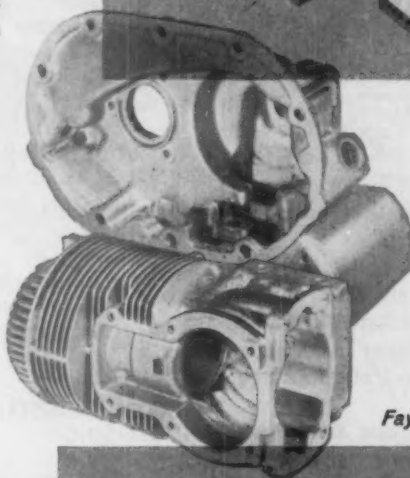
**Realigned operating management** insures a new high order of quality control, and improved traffic both in and out of Precision's plants.

**Progressive modernization** of all production equipment enables us to provide better-made, better-finished products.

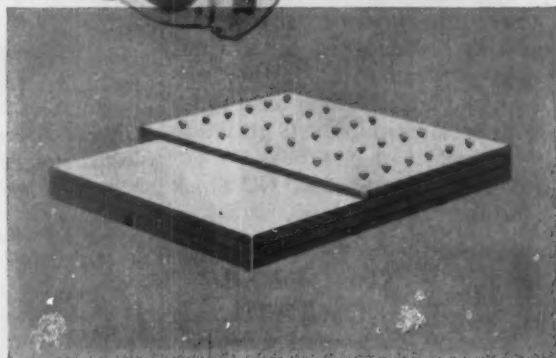
Thus, our new hallmark signifies the dynamic force and broadened scope of the new Precision Castings Company... producing the finest zinc and aluminum die castings for precision-minded manufacturers.



Cleveland, Ohio



Fayetteville, New York



**PRECISION CASTINGS COMPANY**

DIVISION OF PRECASCO CORPORATION

CLEVELAND, OHIO • FAYETTEVILLE, N. Y.



"I always know  
these charts  
are right!"



"I know from experience I can always depend on GC Recording Charts. I haven't had a single complaint from our people who use them since I standardized on GC".

You, too, can trust the quality and performance of GC Recording Charts implicitly. They're manufactured by chart specialists who stake their business life on their ability to produce better charts at lower prices. Over 5,000 users attest to their success.

Service is part of the formula, too. Your orders are electronically processed and shipped from the GC inventory of over 15,000 different types of round, strip and rectangular charts.

You deal with one salesman—one source—instead of many. That saves you clerical work and time. And you can make further savings by placing a long term order with periodic shipments geared to your needs.

Write today for 1960 GC Stock List and sample charts.



DISTRIBUTED BY:

**TECHNICAL SALES CORPORATION**

189 Van Rensselaer St., Buffalo 10, N. Y.

A SUBSIDIARY OF:

**GRAPHIC CONTROLS CORPORATION**  
Buffalo 10, New York

For More Information Write No. 188  
on Place Mark Card—Page 32

## Letters To The Editor

### SINGLE SOURCE

Dear Sir:

Please send us information as to where we might obtain prices, quotations, engineering data, and application information on Illium G bearing material.

E. L. Woods, Buyer  
Byron Jackson Pumps Inc.  
Lawrenceburg, Indiana

● Illium G is a trade name and the only source for this material is: Stainless Foundry & Engineering Inc., 5134 N. 35th Street, Milwaukee, Wis.

### PRICING SERVICE

Dear Sir:

Your April 11 issue had a very fine article on Esso by John Van de Water. On page 77 he mentioned a pricing service called "Radio's Master." Can you please give us the name and address of the publisher?

H. P. Bowler,  
Administrative Manager  
Procurement Department  
Motorola Inc.  
Chicago, Illinois

● The pricing service referred to is: The Radio-Electronic Master, 60 Madison Avenue, Hempstead, L.I., N.Y.

### FILM ON INDUSTRIAL PURCHASING

Dear Sir:

Many thanks for sending us the film "Industrial Purchasing." The reaction was highly favorable. It is well conceived and accomplished its portrayal of the purchasing function, quietly yet forcefully.

E. C. Salemi  
College of Commerce and Business  
University of Illinois  
Urbana, Illinois

Dear Sir:

I certainly want to thank you for the use of the film "Industrial Purchasing." It was shown before a group of our production super-

visors as a preliminary to an indoctrination talk on purchasing, purchasing policies and procedures.

The film, from the reaction of the audience, provided a new insight into some of the roles purchasing can play in a manufacturing organization such as ours.

Thank you for your courtesy in loaning us this film.

William F. Ruzicka,  
Manager of Purchases  
Sylvania-Corning Nuclear Corp.  
Hicksville, New York

● We would be pleased to loan the film "Industrial Purchasing" to other groups for showing at company and association meetings. There is no charge. If you wish to schedule a showing please write Miss Irene Kreidler, Purchasing Magazine, 205 East 42 Street, New York 17, N. Y.

### MAKING IT RIGHT

Dear Sir:

You did a very nice job of setting up and illustrating my article, "How To Cut Inventories 25%" which appeared in the March 28 issue.

I would like to mention that the third man in the picture (far right) on page 71 is L. B. Dunford, buyer. In the formulae on page 72 there are errors. The formulae should be set up thus:

$$\text{Function } (r) = \left( \frac{1}{\sigma \sqrt{2\pi}} \right)$$

$$\text{exponential} \left[ -\frac{1}{2} \left( \frac{r - \bar{d}}{\sigma} \right)^2 \right]$$

The second one should be:

$$\text{Cumulative } F(r) = \frac{1}{\sigma \sqrt{2\pi}} \int_{-\infty}^r$$

$$\text{exponential} \left[ -\frac{1}{2} \left( \frac{x - \bar{d}}{\sigma} \right)^2 \right]$$

J. G. McLellan,  
Purchasing Agent  
Northern Electric Company  
Lachine, Que., Canada





# springs

and other things  
custom-made to quality standards

Answer your  
"where to get it" questions—  
by calling on the versatile  
experience represented  
by these typical springs and  
stamped parts. Here is  
unusual ability to analyze  
your part from both design  
and production efficiency and  
to make cost-saving  
contributions where possible.  
Whether your requirements  
are large or small, routine or  
extreme precision, you'll get  
a better brand of service  
and quality from the best  
springmakers in the business.

Send for "Pocket Guide to  
Springs and Other Things"  
—a quick picture of our  
products and services.



**Associated Spring Corporation**



**General Offices: Bristol, Connecticut**

Wallace Barnes Division, Bristol, Conn. and Syracuse, N. Y.

F. N. Manross and Sons Division, Bristol, Conn.

Dunbar Brothers Division, Bristol, Conn.

Wallace Barnes Steel Division, Bristol, Conn.

Canadian Subsidiary: Wallace Barnes Co., Ltd., Hamilton, Ont. and Montreal, Que.

Raymond Manufacturing Division, Corry, Penna.

Ohio Division, Dayton, Ohio

Cleveland Sales Office, Cleveland, Ohio

Chicago Sales Office, Chicago 46, Ill.

Puerto Rican Subsidiary: Associated Spring of Puerto Rico, Inc., Carolina, P.R.

B-G-R Division, Plymouth and Ann Arbor, Mich.

Gibson Division, Mattoon, Ill.

Milwaukee Division, Milwaukee, Wis.

Seaboard Pacific Division, Gardena, Calif.





## SPAULDING 800 ROD

*Puts More "Skill"  
in Electric Skillets*

Thanks to this tiny insulation pin, housewives now get exact temperature control in their cooking appliances because manufacturers are able to design a better product.

It's made of Spaulding 800 Rod material and used in the temperature control dial of electric fry pans.

Spaulding 800's extremely high dimensional stability under heavy moisture conditions helps the dial maintain factory-set temperature calibration and control indefinitely.

800 is another example of a new material developed through the research facilities at Spaulding to meet the changing needs of industry.

Progress Reports on other new Spaulding materials are available on request.



*Spaulding 800 Offers  
These Unique Characteristics*

**SPAULDING FIBRE COMPANY, INC.**

310 Wheeler Street, Tonawanda, New York



**SPAULDING FIBRE COMPANY, INC.**

362 WHEELER STREET, TONAWANDA, NEW YORK

For More Information Write No. 190 on Place Mark Card—Page 32

ELECTRICAL GRADES	XXX-800	LE-800
	(Paper Base)	(Linen Base)
Diameter Tested .....	1/4"	1/4"
Water Absorption % .....	.46	.42
Specific Gravity .....	1.35	1.37
Flexural Strength PSI .....	28,000	26,000
Tensile Strength PSI .....	16,700	21,000
Compressive Strength Axially .....	24,000	30,000
Charpy Impact Strength Ft. Lbs. ....	.25	.38

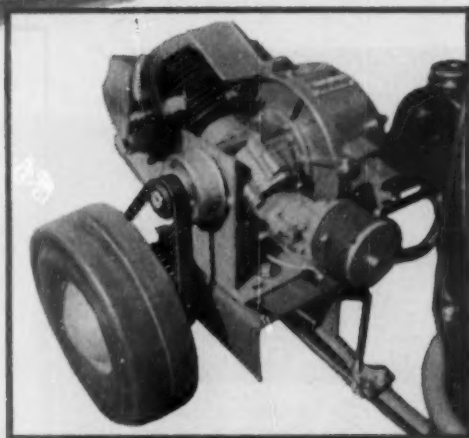




**PowerGrip** "TIMING" BELTS from the Power Unlimited complete belt line



Even the youngsters  
are making time with  
the U.S. PowerGrip  
"Timing" Belt



Howard Industries, Inc. (Sumter, S. C.) use the U. S. PowerGrip "Timing"® Belt to get perfect transmission response on the Go-Karts they manufacture.

Says Howard E. Short, president, "This car is being raced with gratifying results by children and adults. The U. S. PowerGrip "Timing" Belt provides positive transmission of power. Our engine is a 2½ h.p., 2-cycle chain saw engine turning up at 6200 r.p.m.

"U. S. PowerGrip "Timing" Belt drives made it possible to economically convert this motor for installation in the Go-Kart. Since "Timing" Belts are fixed drives, they need no maintenance or adjustment and they whiz the Go-Kart

along at speeds of 35 to 60 miles per hour, depending on the drive ratio."

U. S. PowerGrip "Timing" Belts with speeds ranging to 16,000 r.p.m. and up to 1000 h.p. have made possible not only the efficiency of the Go-Kart, but literally the design and production of hundreds of appliances and equipment, ranging from sensitive electronic devices, office machinery, household equipment and gigantic production machinery.

One way to get expert transmission counsel is from the U. S. Rubber Distributor. He's your best on-the-spot source of technical aid, quick delivery and quality industrial rubber products.



Mechanical Goods Division

**United States Rubber**

WORLD'S LARGEST MANUFACTURER OF INDUSTRIAL RUBBER PRODUCTS

Rockefeller Center, New York 20, N.Y.

In Canada: Dominion Rubber Company, Ltd.



**GENERAL ELECTRIC  
ANNOUNCES**

**PRE-HONED**



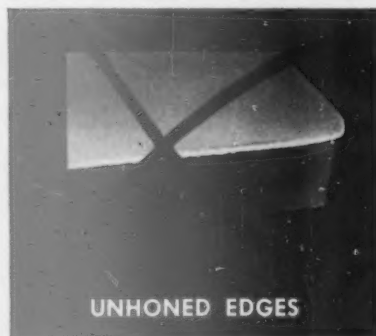
**HAND HONING**

Hand-honing is inaccurate, time-consuming—often results in premature chipping and breaking.



**45° MACHINE CHAMFER**


Chamfered, or ground-flat, edges are geometrically weaker than a radius and are more easily chipped or broken.



**UNHONED EDGES**

Unhoneed or as-ground inserts show rough edges—result in unpredictable tool life due to chipping.

Now you get more  
predictable tool life...  
lower cost per cutting edge  
... no hand-honing cost!



Pre-honed inserts with uniform, precise honed edges offer top strength; improve tool life predictability.



Additional savings result through the elimination of costly and often inaccurate hand-honing methods.

Because chipping and breaking are minimized, pre-honed Carboloy inserts result in lower average cost per cutting edge.

### TOPS IN TOOLING QUALITY

From the research and quality-control facilities of the Metallurgical Products Department of General Electric comes the outstanding quality tooling line in the metalworking industry. The new Carboloy pre-honed inserts, as well as the complete line of Carboloy toolholders, inserts, insert seats, convertible seats, and brazed tooling, are designed to meet every tooling need efficiently and economically.



# CARBOLOY<sup>®</sup> INSERTS

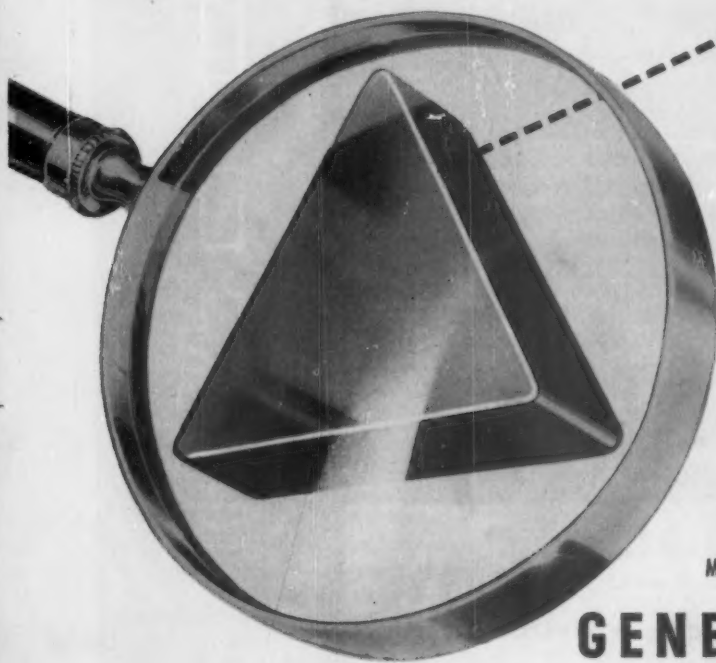
**Delivered ready-to-use . . . honed to a precise radius . . . promise  
BETTER PROFITS THROUGH BETTER TOOLING**

Now General Electric Carboloy inserts are pre-honed *at the factory!* Here's what it means to you:

1. An insert with edges honed to precise *radii* gives the strongest geometric shape to withstand cutting pressures. This reduces the chance of chipping—increases the predictability of tool life. Hand honing *cannot* achieve precise radii—G-E pre-honing can . . . and does!
2. Since chipping is minimized, fewer cutting edges are wasted. The result is lower cost per cutting edge.
3. Since inserts come pre-honed and ready-to-use, the labor cost and inaccuracies of hand honing are eliminated. This more than offsets the additional charge for pre-honing.

4. Pre-honed Carboloy cemented carbide inserts have standard edge radii honed to a greater or lesser degree, depending on the job to be done. You'll *know* the honing is right!

Ask your Authorized Carboloy Distributor about pre-honed Carboloy inserts, convertible seats, toolholders, and brazed tools. Or, write directly to: *Metallurgical Products Department of General Electric Company, 11143 E. 8 Mile Ave., Detroit 32, Michigan.*



Shown here, both under magnification and graphically, is an edge of the new Carboloy pre-honed insert. Radius is geometrically ideal to minimize chipping, extend tool life many times.

**CARBOLOY**  
CEMENTED CARBIDES

METALLURGICAL PRODUCTS DEPARTMENT

**GENERAL  ELECTRIC**

CARBOLOY<sup>®</sup> CEMENTED CARBIDES • MAN-MADE DIAMONDS • MAGNETIC MATERIALS • THERMISTORS • THYRISTORS • VACUUM-MELTED ALLOYS



from the Udylite supplies network you get . . .

# QUALITY, QUANTITY, SERVICE

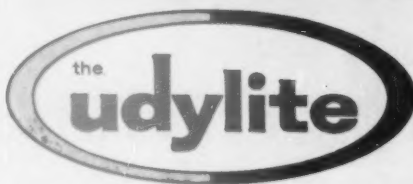


From the moment your supplies order reaches Udylite it is subjected to a complex series of checks . . . to assure you of efficient service and fullest satisfaction.

We check for Quality—experienced personnel avert costly errors by questioning the order. This goes on through the order department, the teletype network and the warehouse until your order is finally placed aboard carrier. Even then, if need be, it will be followed by our experienced traffic department clear to its destination.

We check the Quantity—the size of your order will determine where it can best be filled at any one of 20 warehouses carrying Udylite supplies. Careful analysis here means important savings for you.

The same careful screening of your order takes place regardless of the quantity or dollar volume involved. Find out just how much you can benefit from this Udylite service . . . try it today.



corporation • detroit 11, michigan

on the west coast: N. Butcher Co.

world's  
largest  
plating  
supplier

u  
d  
y  
l  
i  
t  
e



## Purchasing People In The News

Promotion of **Robert W. Tomlinson** to senior buyer of **Alpha Portland Cement, Easton, Pa.**, has been announced. Mr. Tomlin-



**Robert W. Tomlinson**

son started with Alpha as a buyer in 1958. He replaces **James I. Maguire**, who was recently appointed director of management services. **Renton B. Bethman** succeeds Mr. Tomlinson as buyer.

**John S. Anderson** has joined the **Dewey and Almy Chemical Division, W. R. Grace & Co., Cambridge, Mass.**, as assistant purchasing agent. Mr. Anderson has been with the **Dow Chemical Company** since 1951, most recently as divisional purchasing agent. He has also served with the **Armour Industrial Chemical Co.** He has a B. S. from **Michigan College of Mining and Technology**, where he specialized in chemical engineering.

The appointment of **J. L. Doyle** as buyer, foundry products and supplies, **West Allis Works** purchasing department, has been announced by **Allis-Chalmers, Milwaukee, Wisc.** He succeeds **H. U. Mekeel**, who has resigned. For the last two years, Mr. Doyle had been on special assignment as business supervisor, **C. Stellara-tor Associates, Princeton, N. J.**

Prior to that he was assistant supervisor of the expediting section at the company's **West Allis Works**.

The **Magnavox Company, Fort Wayne, Ind.**, has made the following appointments: **Samuel H. Newnam** has been made corporate purchasing agent at **Fort Wayne**. **Peter A. Moran** is the new purchasing agent of the **Electronics Division** of **Magnavox** at **Greeneville, Tenn.**

Mr. Newnam has been employed with **Magnavox** since 1949. He had been purchasing agent of the **Electronics Division**. Mr. Moran has been with the company since 1941.

The appointment of **Louis E. Hill** as director of purchases of **Nopco Chemical Company, Newark, N. J.** has been announced. He succeeds **Foster L. Jones**, who has retired after thirty years' service with the company. Mr. Hill comes to **Nopco** from the **International Stainless Corporation**, where he served as vice-president and director of purchases. Prior to that, he was with **Celanese Corporation of America** as purchasing agent and assistant director of purchases at its **Chemcel**



**Louis E. Hill**

plant, **Bishop, Texas**. Mr. Hill was graduated from **Golden State University** with a B.S. degree in mechanical engineering and an M.B.A. degree in business admin-

istration. He also attended **The University of California** at **Los Angeles**, **Oregon State College**, **Mexico City College**. He is a member of the **National Association of Purchasing Agents** and the **Southwestern Association of Purchasing Agents**. He is also active in committee and research work on a campaign to establish purchasing as a course in college and university curricula.

**Robert C. McAloney** has been appointed assistant head of the central purchasing department for **Coats & Clark, Inc., New York, N. Y.** He will assist **Carl H. Neuer**,



**R. C. McAloney**

head of central purchasing. Mr. McAloney joined the company in **Canada** in 1927 as office boy. Five years later he was chosen by the firm to attend **McGill University** for administrative training. As purchasing agent and head of merchandising, he left **Canada** in 1946 to take up production planning duties in the firm's **Toccoa, Ga.** plant. There he was made purchasing agent. In 1955, he was transferred to **Coats & Clark's** central purchasing department in **N. Y.**

SEE PAGE 248 FOR MORE  
PURCHASING PEOPLE IN  
THE NEWS



# ONLY



is the originator  
and developer of  
the revolutionary  
new L-100-M

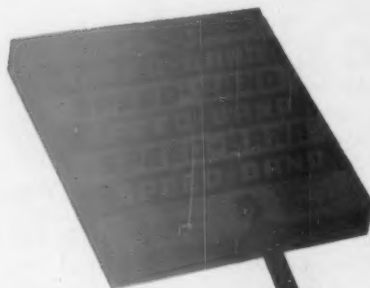
## SPEED-BAND®

double carbide  
Band Saws



# ONLY

available from  
authorized  
CAPEWELL  
Distributors



Ask your Capewell  
Distributor for  
the complete story



THE CAPEWELL MFG. CO.  
HARTFORD 2, CONN.

For More Information Write No. 194  
on Place Mark Card—Page 32

## FOB—"filosofy of buying"

HEREWITH we start a new department for super-sensitive P.A.'s or buyers whose goofs leave them with feelings of shame, guilt, or remorse. Our aim is to prove that it happens in the best of families. (We also aim to prove that other people also have trouble with suppliers).

Item 1: A Chicago pickle packer, Glaser, Crandall Co., bought a factory in Mattawan, Mich., moved in, and found that it had inherited 50,000 glass jugs. Then the P.A. found 250,000 Spanish corks. Was Glaser, Crandall Co. a pleased pickle packer? Absolutely not. The jug openings were too small to get pickles through, and the corks didn't fit the jugs. Somebody in the firm that originally occupied the building simply had bought too much of two wrong things and almost literally swept them under the carpet. Come to think of it, maybe there was some backdoor selling involved.

Item 2: The fire department built a nice, new, expensive firehouse on Staten Island, got it all painted and spruced up and ready

for dedication. Then someone discovered the four brass poles the firemen used to slide downstairs when the alarm rings hadn't been delivered. They finally turned up, but were too long to bring in through the door. So the firemen—or their contractors—punched four holes in the nice, new, shiny firehouse roof and lowered the poles through them and into place.

HERE'S an interesting way to handle the growing problem of salesmen's attempts to get around the purchasing agent by going straight to top management. It's described by the head of a medium-sized firm in "Management Briefs" (No. 104), issued periodically by Rogers, Slade & Hill, consultants on management problems. He had been regularly called on by sales representatives who he felt should have been content to do business with the company's technically trained staff executives, like the purchasing agent.



"I asked for a weekly status report. 'Pretty good' isn't much to go on. . ."



"I couldn't refuse to see these gentlemen," he says, "or at least I wouldn't. After all, our company has its field men, and we know that in order to make a sale they sometimes have to see the top-level executive as well as the technical specialists. Also, I like people and I don't underestimate the value of the ideas I get, especially from strangers. But for me to see them all without appointment would have left me little time for my proper job.

"So I had a message processed on our executive stationery, over my signature. It said about what I have above, as carefully and considerately as I could phrase it. Then it added that I would see anybody and everybody on Thursday mornings, from 8:30 to 12:30, first come, first served. If anybody wanted an interview at other times, I'd give him an appointment if he could sell me the idea in a half page letter—or, of course, if the P.A. or the A.M. or the Engineer was interested enough to set one up for him.

"It has worked out very well. I try to confine my absences on trips to other parts of the week, so as to be here on Thursday. In this city, of course, it is no hardship for the other fellow to be here on that day. Thursday is far enough along in the week so that the pressure is off—and so that I welcome the opportunity to talk, to get new points of view, to learn stimulating facts, and to keep up with the trend in our business. On those counts, as well as for the opportunity that occasionally arises, to do some useful business for the company, I'd rate my Thursday mornings as among the most worth-while of all the week."

**J**UST as a breather from the excitement of getting out a good-sized magazine every other week, our staff produced an eight-page daily paper at the recent N.A.P.A. convention. Despite the pressures, deadlines and general running around, we all enjoyed it and extend our thanks to all who helped us with the paper. We're especially indebted to Royal Typewriter who supplied our press room with basic tools of our trade.

*for*  
**CORROSIVE  
SERVICE**

## wire cloth

In many metals including...

**STAINLESS STEEL  
MONEL • NICHROME  
PHOSPHOR BRONZE  
ALUMINUM  
BRASS • COPPER**

For many uses involving...

**FILTER CLOTH • SIEVES  
STRAINERS • SCREENS  
BACKING CLOTH  
WIRE GUARDS  
BOLTING CLOTH  
SPACE CLOTH**

If you have a tough corrosion problem and need wire cloth or wire cloth parts, here's a source of supply that knows the answers. We are proud of the quality of our cloth...accurate mesh count, close tolerance wire diameter, precision weaving...plus the know-how necessary to specify the proper alloy for your service conditions.

**NEWARK**  
for **ACCURACY**

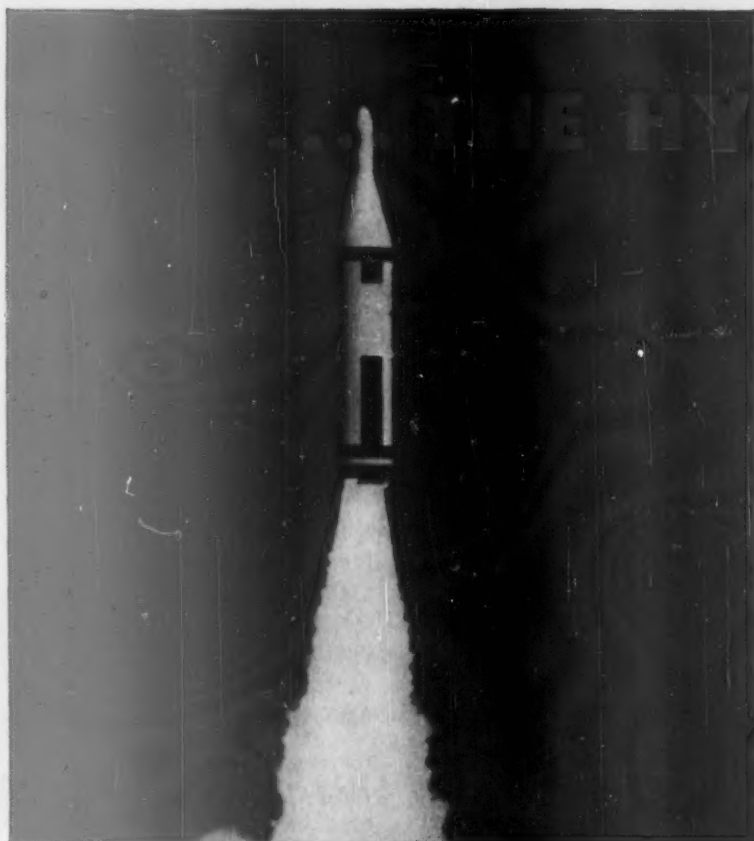
Write or call us today if you have a problem calling for anti-corrosive wire cloth or wire cloth parts. Send for Bulletin F-C.

**Newark Wire Cloth**  
**COMPANY**

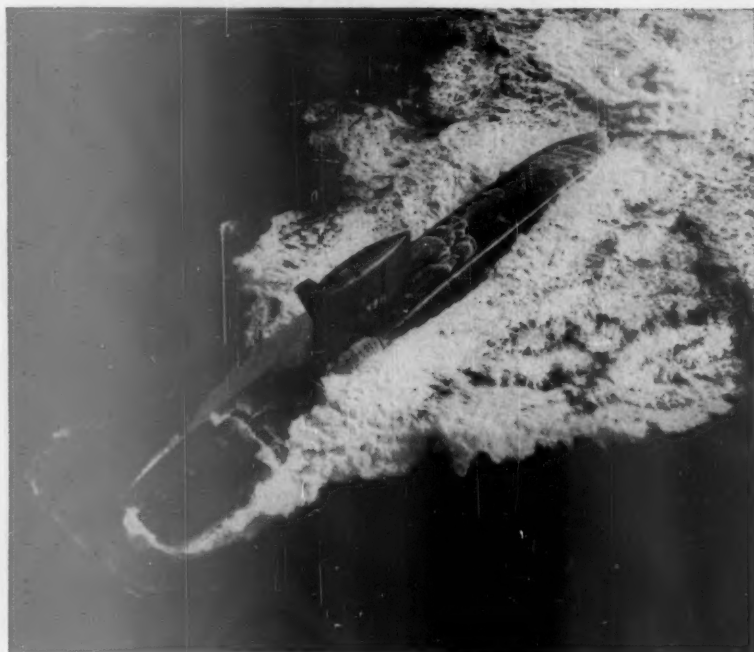
351 Verona Avenue • Newark 4, New Jersey

For More Information Write No. 195 on Place Mark Card—Page 32





*Fortified Houghto-Safe fire-resistant hydraulic fluid is used in Polaris missile launching systems in atomic submarines. Houghton VIX-SYN synthetic rubber packings are also used in these submarines.*



For More Information Write No. 196 on Place Mark Card—Page 32

# ...THE HYDRAULIC

## ...another



### **FIRE-RESISTANT HYDRAULIC FLUIDS**



Houghton Houghto-Safe fortified fluids were among the first fire-resistant synthetic hydraulic fluids developed for industry and Navy carriers and missile handling and launching equipment. Now available in a wide range of water-glycol, phosphate ester, and water-oil emulsion formulations, fortified Houghto-Safe fluids (and compatible packings) meet almost any types and degrees of fire-hazardous applications.



# ENGINEER

man who knows  how much  
**HOUGHTON KNOW-HOW helps!**

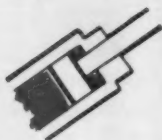
In the Houghton Line, there's a full range of new, as well as old, established hydraulic fluids and packings to improve most any hydraulic process. But *making* these products is only half the Houghton story.

More important is Houghton's ability to make them *work for you* . . . just as they are doing for the U.S. Navy . . . job-tailoring each to fit your particular application. Most important, Houghton gives you the benefit of many years of experience and research in all areas of hydraulics to help solve

the immediate problem in yours. That's the unique niche Houghton has carved for itself all over the world. And it's one where our leadership has never been challenged.

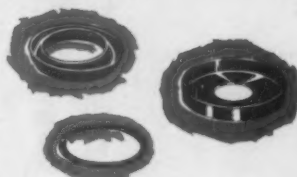
Near you there's a Houghton Man whose broad hydraulic know-how and on-the-job-'til-it's-done service is yours with every item in the Houghton Line. He's a good man to have on your team. Call him or write E. F. Houghton & Co., 303 W. Lehigh Avenue, Philadelphia 33, Pa.

## HYDRAULIC OILS AND ADDITIVES



Houghton Hydro-Drive oils, fortified for high oxidation stability, solvent action, corrosion resistance, rust prevention and film strength, are well known for their low cost, trouble free performance in hydraulic applications. In closed water systems, Houghton Hydrolubric added to the water has provided lubrication and rust protection for the entire system.

## HYDRAULIC PACKINGS



Leadership in packings standardization is one reason major hydraulic equipment manufacturers consider Houghton "packing headquarters". Houghton is also the only manufacturer who offers a complete line of both packings and fluids for any industrial hydraulic system . . . your guarantee of a completely unbiased recommendation.

## ON-THE-JOB SERVICE...



. . . the most valuable help Houghton can give you. More than 100 Houghton sales engineers are backed by skilled laboratory and field technicians, all experts in their fields. Our 96-year reputation rests on the ability and integrity of these men who are truly your Partners in Production.

**Industry's Partner in Production**



**E. F. HOUGHTON & CO.**

Philadelphia, Pa. • Chicago, Ill. • Carrollton, Ga.

Detroit, Mich. • San Francisco, Calif. • Toronto, Canada

JUNE 20, 1960

For More Information Write No. 196 on Place Mark Card—Page 32

61



# CUT YOUR COSTS WITH THESE PROBLEM SOLVERS



**Lead Lifter Series "700" Wire Rope Electric Hoist.** Fast, heavy-duty type. Push-button control. Single and two-speed models. All types of suspension, including low headroom. Capacities: 1/2 to 15 tons.



**Lead Lifter Series "800" Wire Rope Electric Hoist.** A powerful production helper. Push-button control. Single and two-speed models. All standard suspensions. Capacities: 1/2 ton and 1 ton.



**Push Button Budget Electric Hoist.** Portable. For regular hoisting service. Two fully enclosed automatic brakes. Provides fast, accurate spotting action. A 1/2-ton load can be lifted at 34 FPM. Hook suspension. Capacities: 1/4 to 2 tons.



**Pull Cord Budget Electric Hoist.** Ideal for intermittent service. Has efficient gearing and two brakes. Uses little electricity. Comes ready to hang up, plug in, and use. AC, DC, and 12-volt battery-operated models. Hook suspension. Capacities: 1/4 to 2 tons.



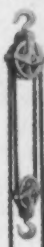
**Lead Lifter Air Hoist.** Wire rope load line. High starting torque and smooth operation with 5-cylinder radial air motor. Infinitely variable speed control to 37 FPM. Throttle control available. All standard suspensions. Capacities: 1 to 15 tons.



**Budget Air Hoist.** Link and roller chain types. Pendant cord control. Speeds infinitely variable to 75 FPM. Rigid mount push trolley available. Safety hooks standard. Capacities: 1/4, 1/2 and 1 ton.



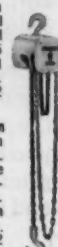
**Tugit Lever-Operated Hoist.** Light, compact, portable. Easy to operate even in close quarters at any angle. Fine for maintenance. Capacities: 1/4 to 3 tons.



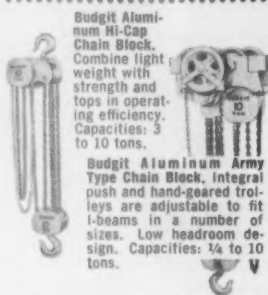
**Budget Differential Hoist.** Low-priced lifting tool for occasional use where high efficiency isn't essential. Light and compact. Capacities: 1/4, 1/2 and 1 ton.



**Budget Roller Chain Block.** Spur-gear efficiency combined with lightness. 45 lb. pull on hand chain lifts 1/2 ton. Capacities: 1/4 to 2 tons.



**Budget Aluminum Chain Block.** Light in weight but tough. Can be carried to the job, hung up and operated by one man. Spark and corrosion resistant models. Capacities: 1/4 to 2 tons.



**Budget Aluminum Hi-Cap Chain Block.** Combine light weight with strength and tops in operating efficiency. Capacities: 3 to 10 tons.



**Budget Aluminum Army Type Chain Block.** Integral push and hand-gear trolleys are adjustable to fit I-beams in a number of sizes. Low headroom design. Capacities: 1/4 to 10 tons.



**I-beam Trolleys.** Attach to top hook of hoist to add travelability. Operate on bearing equipped wheels. Geared type available. Capacities: to 20 tons.



**Budget Cord Reel.** Supplies current to hoists and portable tools with polyphase motors up to 7 1/2 hp. — single phase to 1/2 hp. Cable reels off in any direction.



**MMM Load Scale.** Permits weighing loads while in suspension. Saves handling time and costs. Guards against overloading lifting equipment. Capacities: 1/4 to 2 1/2 tons.



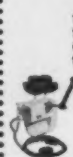
**Budget Cord Conductor Trolley.** Use any number to hold aloft and travel any hoist conductor cord or air hose. Fit 8" to 18" I-beams.



**Gantry "A" Frame.** For low-cost mobile lifting service. Caster equipped. Shipped knocked down. Easy to assemble. Capacities: 1 and 2 tons.



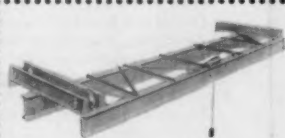
**Budget Crane Assemblies.** Top-running, underhung and jib types. Packaged components for erection on the job site. Capacities: to 6 tons, spans to 30 feet.



**Budget Bridge Drive.** Converts hand-operated cranes up to 10 tons to "walking speed" electrical operation at low cost. No drilling or machining. Push-button control.



**Lead Lifter Jib Cranes.** Revolve 360° on ball and roller bearings. No binding. Types that bolt to floor serve 550 sq. ft. Others set in concrete serve up to 1500 sq. ft. Capacities: 1/4 to 5 tons.



**Lead Lifter Bridge Crane.** Electrically operated underhung type with single girder. Spans to 50 feet. Capacities: 1/2 to 10 tons. Other Lead Lifter Cranes to 50 tons, spans to 60 feet.

TRADE NAMES SHAW-BOX, LOAD LIFTER, BUDGIT, HI-CAP AND TUGIT ARE REGISTERED TRADEMARKS

**HANDLE MATERIALS MORE EFFICIENTLY** and you save time and manpower, increase the safety level and output of your plant, and cut unit costs.

Whatever your overhead load-handling problem, MMM offers by far the most complete variety of modern hoists, cranes and auxiliary equipment available anywhere.

**CALL ON YOUR NEARBY SHAW-BOX DISTRIBUTOR** for experienced help in selecting the load handling devices that will serve best and save the most in your particular operation. He maintains ample stocks to give you prompt delivery. So let him contribute to the smooth, economical production that is essential to broaden your profit margin. His service is as close as your telephone. Phone him for complete information or write to us for bulletins.



## OVERHEAD LOAD HANDLING EQUIPMENT

### Products of

## MANNING, MAXWELL & MOORE, INC.

Shaw-Box Crane & Hoist Division • Muskegon, Michigan

In Canada: Manning, Maxwell & Moore of Canada, Ltd., Galt, Ontario

For More Information Write No. 197 on Place Mark Card—Page 32.



*Planned Packaging moves merchandise*

*Shake it...  
squeeze it...  
but you can't  
poof it!*

Sealed, tight, completely, from the time it leaves the filling line till it reaches the user's hands. Developed by Packaging Corporation of America technicians to eliminate use of inner bags or overwraps for cereals, dry powdered foods, soap products, chemicals and many others, this exclusive Calk-Seal\* technique provides positive protection against sifting and infestation. And the single structure package multiplies filling line speed, reduces handling costs. Every day more and more packagers of such products are turning to the advantages of Calk-Seal as a superior packaging method. Developing and providing such advanced packaging techniques is but one of countless ways in which Packaging Corporation of America's concept of Planned Packaging, implemented through integrated national facilities, produces better packaging . . . more sales. Whether your requirements are large or small, regional or national, we welcome the opportunity to help you.

\* Machine and process patents applied for.



## *Packaging Corporation of America*

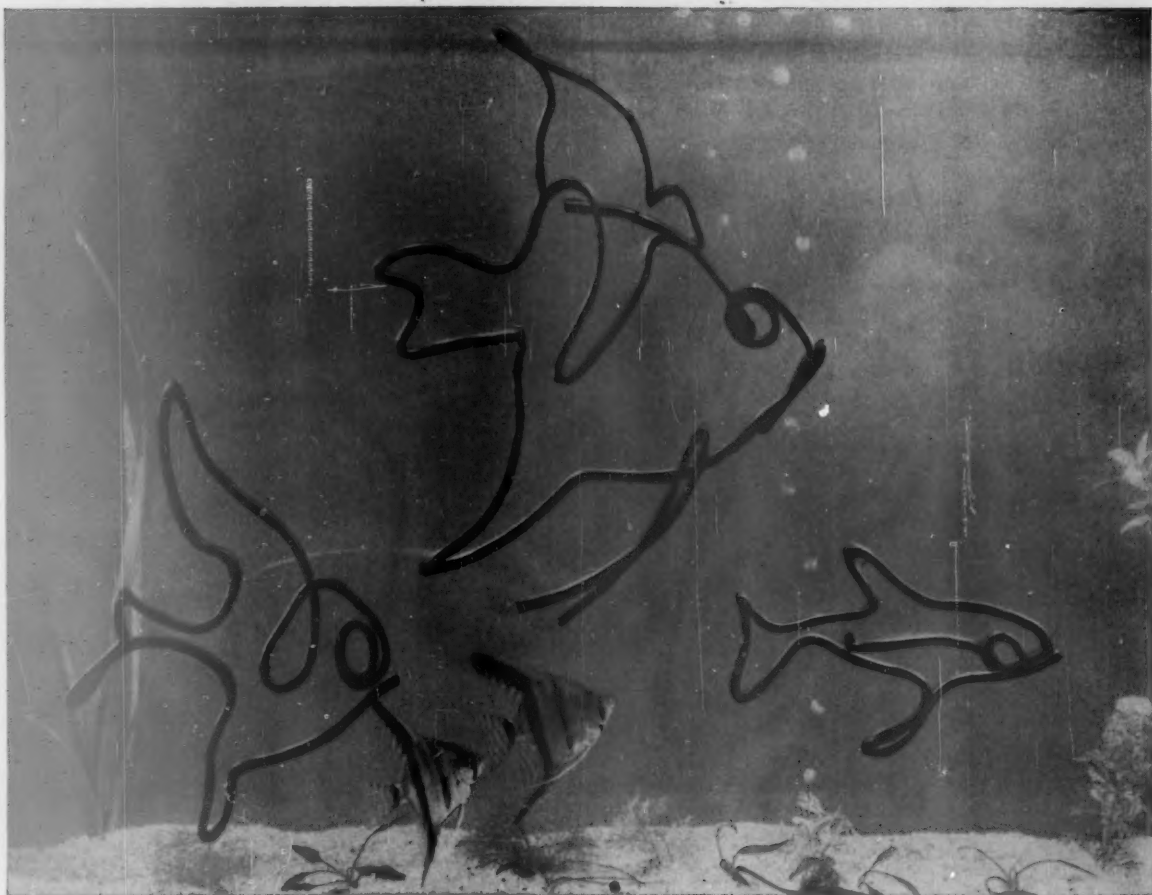
1632 CHICAGO AVENUE, EVANSTON, ILLINOIS

*Cartons • Containers • Displays • Egg Packaging Products • Molded Pulp Products • Paperboards*

JUNE 20, 1960

For More Information Write No. 198 on Place Mark Card—Page 32





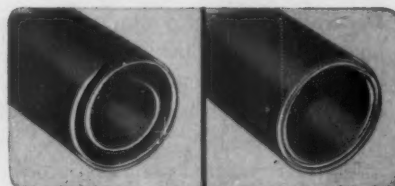
## Bundy can mass-fabricate practically anything

Bundy promises promptness . . . and lower costs with Bundyweld® double-walled steel tubing

JUST as sure as fish have fins, you can count on Bundy to deliver your tubing order without fuss . . . without delay! And you can have Bundyweld — the original double-walled steel tubing — from stock for fast off-the-shelf delivery, or mass-fabricated to your specifications. In either case you get top quality and lower costs coupled with *s-p-e-e-d!*

And there are other extras when you specify Bundyweld. Designing and engineering services, for example. Bundy's people work hand-in-hand with your own engineers to solve tubing problems . . . save time and money. And Bundy has special machinery to mass-fabricate small-diameter tubing to your exact specifications. Covered by Government Spec. MIL-T-3520, Type III.

All in all, when it comes to tubing, you'd be wise to talk with Bundy! Phone, write, or wire Bundy Tubing Company, Detroit 14, Michigan.



Bundyweld is the original tubing double-walled from a single copper-plated steel strip, metallurgically bonded through 360° of wall contact for amazing strength, versatility.

Bundyweld is lightweight, uniformly smooth, easily fabricated. It's remarkably resistant to vibration fatigue; has unusually high bursting strength. Sizes up to 3/4" O.D.

*There's no substitute for the original Bundyweld Tubing.*

# **BUNDY TUBING COMPANY**

HOMETOWN, PA. • DETROIT 14, MICH. • WINCHESTER, KY.

WORLD'S LARGEST PRODUCER OF SMALL-DIAMETER TUBING. AFFILIATED PLANTS IN AUSTRALIA, BRAZIL, ENGLAND, FRANCE, GERMANY, AND ITALY

For More Information Write No. 199 on Place Mark Card—Page 32



# In Purchasing...



**I**F YOU missed the 45th annual convention and Inform-A-Show of the National Association of Purchasing Agents in Los Angeles a few weeks ago, you missed one of the best meetings in the history of the event. The next best thing to being there, is to have a complete report on the outstanding talks—and that is what we are bringing you in this issue. If you were at the convention, this report will refresh your memory and help you prepare your own report for your department and your management.

The report starts on page 70 and runs through page 108.

Among the features in this special report you'll find the following talks:

President Tom English on "Mr. Purchasing Agent—Is Your Progress Showing?"; George Renard's stimulating and provocative comments on the problem of foreign competition; William C. Meyer's analysis of purchasing automation.

You should be particularly interested in two talks on the management aspects of purchasing—"Management Techniques" and "Is Purchasing Achieving Top Management Status?" Texts of both appear in the report.



A brilliant new convention feature—after-breakfast workshops — developed eminently practical information on a number of basic purchasing subjects. Among those covered in this issue: the scope of the purchasing function, evaluation of performance, traffic and transportation, reports to management, manuals, vendor performance, data processing.

In addition to the business side of the convention we give you some of the human side—in the form of dozens of photographs. We hope you enjoy them.

## On the Cover



The 1960-61 N.A.P.A. Executive Committee (l. to r.): Harold Jungbluth, District 3; Herbert Layport, District 9 (in back); W.C. Adamek, District 2; Glenn L.R. Baumhardt, District 4, (in back); Cloice E. Temple, District 7; Clinton E. Bishop, District 5; Paisley Boney, President; Thomas O. English, Past President; Kenneth A. Schmitz, District 1; Frederick C. Esser, District 8; A.B. Wadsworth, District 6.

*Ray Richards*  
Ray Richards  
Publisher

JUNE 20, 1960



**"WITH LUBRIPLATE  
LUBRICANTS—NO  
BEARING LOSS FOR  
AN ENTIRE SEASON"**

so states a well-known manufacturer  
of Cotton Gin and Oil Mill Machinery

"We have gone to great expense in checking lubricating greases out in the field and find the best to be LUBRIPLATE. Over a season's test we found that out of all the greases tried LUBRIPLATE was the only one that did stand up under all operating conditions throughout a season's run without loss of a single bearing."

**REGARDLESS OF THE SIZE AND  
TYPE OF YOUR MACHINERY,  
LUBRIPLATE GREASE AND  
FLUID TYPE LUBRICANTS WILL  
IMPROVE ITS OPERATION AND  
REDUCE MAINTENANCE COSTS.**

LUBRIPLATE is available in grease and fluid densities for every purpose... LUBRIPLATE H. D. S. MOTOR OIL meets today's exacting requirements for gasoline and diesel engines.



For nearest LUBRIPLATE distributor see Classified Telephone Directory. Send for free "LUBRIPLATE DATA BOOK"... a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.



For More Information Write No. 200  
on Place Mark Card—Page 32



# NEW SPICER 1550 SERIES UNIVERSAL JOINTS...



## A bigger, more rugged universal joint for trucks with 29,000-30,000 GVW

Spicer is now manufacturing a completely new series of universal joint... the 1550 series. With 20% greater bearing factor and a minimum elastic limit 20% greater than previous 1500 series joints, the 1550 series is a bigger performance value... at lower cost.

The new 1550 series universal joints give you these important performance advantages:

- Reverse Spline Center Bearing construction.
- Crowned Bearing Races, for better bearing alignment, longer life.
- "U" bolt and snap ring design for reduced maintenance costs.
- Synthetic double lip type seal, for tighter, more positive sealing.
- Shorter length flange face to flange face on short coupled sets, to take full advantage of available space.
- Extremely close limits of static and dynamic balance for vibration-free operation.

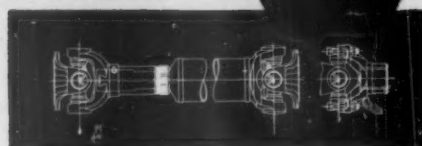


**DANA**  
CORPORATION

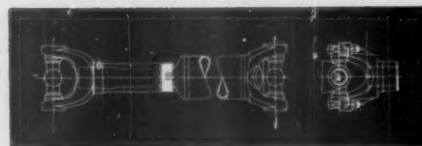
Toledo 1, Ohio

Many of these products are manufactured in Canada by Hayes Steel Products Limited, Merrilton, Ontario

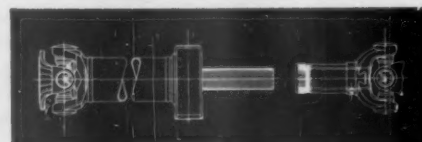
For More Information Write No. 201 on Place Mark Card—Page 32



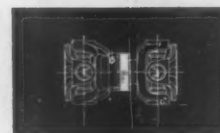
Standard Assembly  
Flange Yokes or End Yokes are Optional



High Angle—Inter Axle Assembly  
End Yokes are Standard



Multiple Shaft Assembly  
With Center Bearing



Short Coupled  
Assembly  
Flange Yokes or End  
Yokes are Optional

The 1550 series is now available in all present variations of the 1500 series—including short coupled, high angle and long slip propeller shafts.

For more complete details on the new 1550 series universal joints write to Dana Corporation, Toledo 1, Ohio.

**SERVING TRANSPORTATION**—Transmissions • Auxiliaries • Universal Joints • Clutches • Propeller Shafts • Power Take-Offs • Torque Converters • Axles • Powr-Lok Differentials • Gear Boxes • Forgings • Stampings • Frames • Railway Drives.



## Purchasing Pointers

**HIGH QUALITY MANUAL AT LOW COST**—You can get a fine printing job without paying high prices if you have access to two fairly common machines—an electric typewriter and a Multilith machine. C. Warner McVicar, Rockwell Mfg. Co., estimates purchasing saved about \$10 a page on its 81-page manual by having the text typed on an electric machine and reproduced in the Multilith department. And revisions can be made easier, faster, and cheaper than by commercial methods.

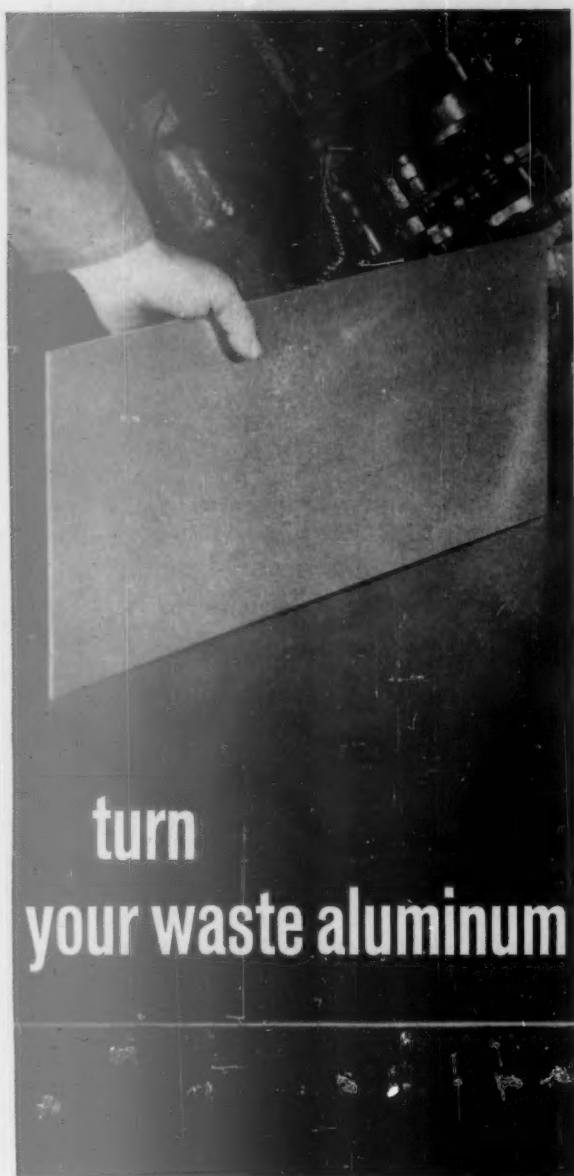
**CAN YOU CENTRALIZE REQUISITIONING?**—The idea may not be practical in some plants and could bring howls from operating people in others, but centralized requisitioning might be something you can use. A clerk, trained in requisition writing and supplied with necessary information on standards, specifications, etc., could operate from purchasing. Requisitioners would call in their requests and the clerk would transcribe them directly from the telephone.

**HOW GOOD IS THE SURPLUS?**—The lists of surplus equipment drawn up by purchasing and distributed throughout multi-plant companies often boomerang. Sample complaints from buying divisions: it costs more to ship the item than it's worth; vital parts are missing from machines; machines and material are in poor condition; surplus items are priced higher than the same or similar items that are available from a local distributor's stock. Moral: to be of any use at all, surplus lists should be complete, comprehensive, and accurate as to type, condition, and true value of items offered.

**GIVE MANAGEMENT THE FACTS**—When reports to management get too frequent or too wordy they lose their effectiveness. Ed Krech, J. M. Huber Corp., suggests this timetable for covering basic points: quarterly—analysis of dollar value of purchases, cash discounts, and inventory variation and turnover; semi-annually—work analysis, waste, scrap, and salvage disposal report; annually—analysis of purchasing department costs, a comparison of purchases to sales, and a written summary covering statistical material, departmental personnel, summary of the year's work, and objectives for the following year.

**VISUAL AIDS HELP SELL YOUR IDEAS**—Some P.A.'s are adding a flair to their reports to management with visual aids. They've learned the techniques of modern selling from their suppliers. One purchasing agent graphically analyzes his department's performance at monthly management meetings with slides, another with large graphs, bar charts, etc. The director of purchases of a mid-western chemical company makes up an annual report similar to one sent to company stockholders; in it he describes purchasing's contributions to profits, making liberal use of charts and photographs.





turn  
your waste aluminum



into  
profitable production

You can eliminate scrap aluminum and start getting a return on the money, time and labor it took to produce this waste. The Ryerson Aluminum Sheet Plan makes exact lengths and widths available to most users—generally on a net-weight basis.

Order the exact sizes you need for production runs—Ryerson cuts them to size and schedules delivery to match your production-line pace. You save the cost of needless scrap, save the cost of cutting, save the cost

of inventory, and release valuable storage space for other use.

At Ryerson you'll also find the widest selection of aluminum alloys, tempers and gauges—plus expert technical help on selection and fabrication problems. This is just one more example of Ryerson "Metalogics" and how it helps you get the most value for your purchasing dollar.

So be "Metalogical"—call Ryerson.



STEEL • ALUMINUM • PLASTICS • METALWORKING MACHINERY

**RYERSON STEEL**

Joseph T. Ryerson & Son, Inc., Member of the INLAND Steel Family

PLANT SERVICE CENTERS: BOSTON • BUFFALO • CHARLOTTE • CHICAGO • CINCINNATI • CLEVELAND • DALLAS • DETROIT • HOUSTON • INDIANAPOLIS  
LOS ANGELES • MILWAUKEE • NEW YORK • PHILADELPHIA • PITTSBURGH • ST. LOUIS • SAN FRANCISCO • SEATTLE • SPOKANE • WALLINGFORD

For More Information Write No. 202 on Place Mark Card—Page 32





## Improving Purchasing Performance

PURCHASING MAGAZINE  
JUNE 20, 1960

**E**VEN DISCOUNTING the obvious chauvinism in the statement, it's hard to deny that the National Association of Purchasing Agents is one of the most self-improvement-minded organizations in the country.

The past year was a full one for N.A.P.A. As usual, its groups and committees have been remarkably active in improving the skills and advancing the status of purchasing agents. Yet the association's business year ended, not with a sigh of relief, but a new burst of effort.

The convention in Los Angeles was a working session in every sense of the word. From early morning—literally—right through the day, members had their pick of the latest and best information on all important aspects of purchasing. (The fine turnouts at the newly-instituted post-breakfast workshops show that the ambitious P.A. is willing to start learning more about his job even at the frightening—for a convention—hour of 8 a.m.)

This year's convention theme was "Improving Purchasing Performance." It would indeed be a dull and unobservant purchasing man who could come away from the convention without some new or profitable idea that he can put to work in his organization immediately. Everyone who was there owes a vote of thanks to those responsible for making this unique educational opportunity possible—the numerous committees, N.A.P.A. officials and administrators, and the Los Angeles Association.

The excellence of N.A.P.A. conventions is a tradition, of course. Another convention tradition is quietly developing, one that reflects the basic strength and unity of N.A.P.A. That is the scheduling of the annual affair into all major sections of the nation.

Not long ago it was considered something of a risk to hold a convention on the West Coast. The gap between conventions in California has gone from fifteen years to seven years, and coming up soon as new convention sites are Dallas and Miami Beach. The sectional struggles of years ago, the feelings of neglect on the part of those locals most distant from national headquarters, are happily gone and we hope forgotten.

If you missed this convention, be sure to attend next year's. Meanwhile, study the full texts of the convention talks in this issue. If, like those who were in Los Angeles, you are bent on improving purchasing performance, you'll find the talks a tremendous source of help.

*Paul V. Farrell*



## 45th Annual Convention National Association of Purchasing Agents

*Los Angeles, May 22-25, 1960*

**"IMPROVING** Purchasing Performance" was the theme that drew thousands of purchasing executives to the 45th annual convention and Inform-A-Show of the National Association of Purchasing Agents in Los Angeles May 22-25.

In addition to the familiar discussions of current business and political affairs by leading figures, the meeting featured a new approach to practical purchasing problems—after-breakfast workshops. In 15 early morning sessions, experienced purchasing agents analyzed and discussed such topics as inventory control, office automation, value analysis, expediting, invoice handling, traffic and transportation.

Paisley Boney, purchasing agent for J. P. Stevens & Co., Inc.,

Greensboro, N. C., was elected president of N.A.P.A. for 1960-61. Mr. Boney, who has had a long and active career in N.A.P.A., was most recently vice-president for District 5.

Chester F. "Chet" Ogden, vice-president of The Detroit Edison Co., Detroit, Mich., was the winner of the J. Shipman Gold Medal Award, for his contributions to the advancement of purchasing. Mr. Ogden is a former president of N.A.P.A.

Much of the credit for the success of the convention goes to members of the Purchasing Agents Association of Los Angeles, the host association. Victor Quam, chief deputy purchasing agent, County of Los Angeles, was program chairman, assisted by Harlan E. Eastman, corporate

purchasing administrator, Beckman Instruments, Inc. E. H. "Buck" Weaver acted as consultant.

E. Benton Long, purchasing agent, U.S. Lime Products Division, The Flintkote Company, was general chairman, assisted by Charles S. Perkins, manager of purchases, Union Oil Company of California, and William O. Hokanson, manager of purchases, Noland Paper Company, Inc.

Texts of talks given at the convention—both at the general sessions and at the after-breakfast workshops—appear in the following pages. Highlights of the general session on the business and economic outlook, and of the forums on commodities are covered in the Pulse of Business section, starting on page 7.



←  
Basil Nelson (r.) presents Shipman Medal to Chet Ogden as Actor Ronald Reagan looks on.



→  
New N.A.P.A. President Paisley Boney (r.) receives congratulations from Banty Eubanks.





On behalf of the eight associations in District 1, Vice President Raymond S. Hill welcomes members of the N.A.P.A. to Los Angeles and to the district.

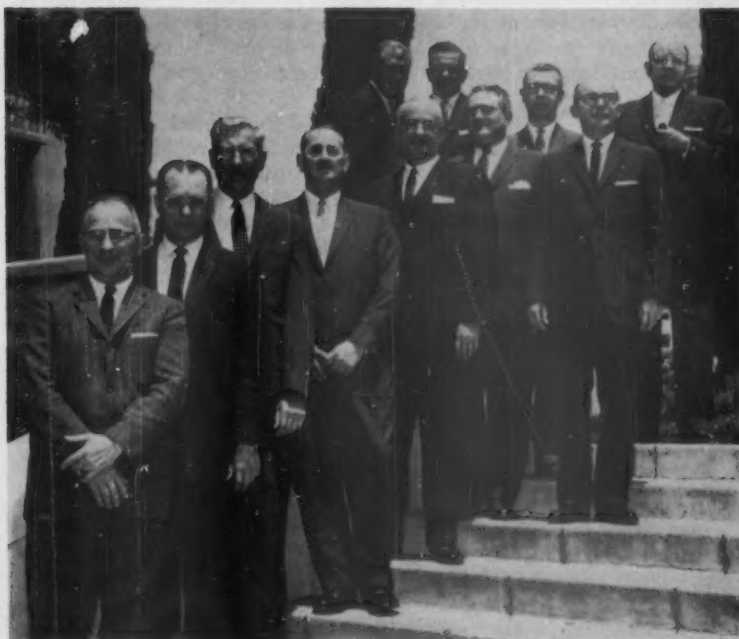


Philharmonic Auditorium in Los Angeles was filled to capacity when the first general session began on Monday morning.



Following the call to order by President English, Former President Gordon Burt Affleck gives the invocation.

Perfect California weather made the short walk from the Biltmore Hotel to Philharmonic Auditorium each day a pleasant experience.



Just after the selection of a new leader for N.A.P.A., the 1960-61 Executive Committee poses on the steps of the Los Angeles post office. See page 65 for identification.

Program Chairman Vic Quam, no mean speaker himself, at the opening session of an outstanding program.





## The President's Message

**By Thomas O. English**

Purchasing Agent,  
Aluminum Co. of America

**I** CAN LEAVE OFFICE in good conscience, believing that N.A.P.A. has had a successful year. I'm certain that we have elected a fine and capable president, Paisley Boney. You also have an outstanding incoming executive committee, who will carry on in the fine tradition that is our heritage. Nevertheless, I cannot pass on to others this tradition and heritage without sharing with them and you my concern about certain subjects which I feel may be of great interest to our association in the foreseeable future.

My principal concern embraces these general areas:

- (1) **The economic situation**
- (2) **The political situation and what we should be doing to contribute our fair share to our nation's future progress**
- (3) **Our profession, our professional accomplishments, and our goals for the future**

I am sure you all realize that anyone could give a full-length talk on each of these subjects and not even scratch the surface. I shall, therefore, deal very briefly with the economic and political situations and devote most of my attention to our profession.

Let's think together for a brief minute or two about the economic situation. While I claim no special talents as an economist or as an economic forecaster, I, like most of you, have been hearing much during the past several months about what many are optimistically calling the "golden sixties" or the "soaring sixties."

Because of the overwhelming optimism, we have to listen most carefully to find that there may

be one, or perhaps two, slight recessions sandwiched in between the booms in this decade. Such optimism could conceivably lull some of us into believing that we are facing a perpetual sellers' market. Except during a war, I doubt if purchasing agents should ever admit or become convinced that there is such a thing as a sellers' market.

Purchasing is a profit-contributing function. Since the magnitude of a boom or the severity of a recession is judged in part by the profit picture, purchasing can contribute much toward shaping the economic pattern of the next decade.

It is important, and I think it may be helpful, to identify—from the layman's viewpoint—some of the more obvious factors that may exert economic pressure during this most challenging period.

### **Spend More on Research**

Increased research and development will probably be the most important factor of our boom economy during the next decade. In 1939, the amount being spent annually by industry and government for research and development was approximately one-half billion dollars. By 1959, this rate of spending was more than 10 billion dollars. The average rate of spending for R&D during the next decade will probably be somewhere between 13 and 15 billion dollars.

When we think of the tremendous outlays in prospect for research and development—and the resultant needs for capital—an important question arises.

Where will the money come from?

If we consider only domestic financing, there would appear to be three sources which will add much capital to the old stand-by sources, like insurance companies and commercial banks. They are:

- (1) **open-end mutual funds**
- (2) **Building and loan associations**
- (3) **Pension funds**

There was probably 25 billion dollars in these funds in 1950. There is now more than 100 billion dollars in these funds—and they are likely to exceed 400 billion dollars by 1970.

Pension funds, in effect, are forced savings, and the other two are promoted by live-wire sales and promotion. Undoubtedly, these sources of savings will exert strong forces toward enlivening any boom tendencies that may exist.

All of this would seem to favor and promote a rapid growth pattern. However, we purchasing agents should always look at both sides of every problem, so let's consider some of the factors that may mitigate against this rapid growth pattern.

First, our economy may be reaching maturity in many respects. Second, the productive forces created as a result of World War II and Korea were so great that it is difficult to visualize a continuance or recurrence. Finally, there is increasing foreign competition.

We often hear the population explosion mentioned as one of the factors that will promote rapid growth. Yet if we consider



the combined effect of population increase and household formation during the last decade with the estimate for the same items for the next decade, the fifties seem to have it over the sixties.

Another item that could limit growth in the economy in the sixties is the rise in debt of consumers, corporations, and public entities.

Consumer debts have increased since 1945 from \$55 billion to \$265 billion. Installment credit—one segment of consumer debt—has risen from 1-½% of disposable income to 12%. Corporation indebtedness has increased from \$140 billion to \$550 billion during the same period. Public indebtedness, such as state and local obligations (most of which is subject to repayment by taxation), has at the same time increased from \$15 billion to \$56 billion.

### **Too Much Capacity**

Spending for new plants and equipment was tremendous during the past decade. Today many industries have too much capacity, and their future increases in capacity should be much more gradual.

At the end of World War II, 45% of the families owned an automobile; today, the figure is approximately 75%. The appliance market is somewhat saturated. Television started from scratch after the war, and there is now one in 9 out of 10 homes.

Only 70% of the homes had refrigerators at the war's end; today, there are refrigerators in 99%.

Most of us already know about foreign competition brought about by a rejuvenated and rehabilitated Europe and Japan. This competition will be aided and abetted by the Common Market, the outer seven, and other similar economic communities as they are organized and go into operation.

These several items of plus's and minus's indicate that there are and will be strong forces for and against a continuous boom in the sixties. All purchasing executives will be affected by some of these forces. We must watch and live with these problems

daily. Any purchasing executive who ignores them, or talks himself into believing that he and his company will not be affected, is headed for trouble.

My second point is our political situation. I have pleaded with the members of N.A.P.A. to become more active and involved in politics at the local and precinct level. I have also suggested that they ask their companies to establish a policy to encourage all employees to participate in local politics—even to the extent of seeking and holding political offices.

Too few of us realize that many of our laws which have much to do with our economic and social well-being date back to the major depression days of the early 1930's and before. These four examples will indicate what I mean:

(1) The farm subsidy program. Everyone knows this story and what a political football it is.

(2) Our over-all taxing structure—based on the fundamental principle of "soak the rich." This needs no explanation.

(3) The failure of too many people, including politicians, to realize that unions are now mature and full grown organizations which should carry their fair share of economic and social citizenship.

(4) The Davis-Bacon Act. It was intended to prevent local areas from being flooded by itinerant "cheap" labor. Now it is being used to flood local areas with high-priced labor.

Too many of us are not thinking realistically about the future. We accept too many of these legislative antiquities as inevitable. We hope those that pain us will be changed by one or the other political party.

What too many of us have not learned, or do not realize, is that a political party, as such, does not change except through the activities of those of us who comprise it.

We must, in some way, arouse and enlighten all people about our lack of political progress, get them to realize that pain can be useful when it is the starting point of recovery.

The Action Course in Practical Politics, developed and promoted

by the Chamber of Commerce of the United States, is a wonderful beginning and an outstanding contribution. This course contains information about everyday politics never before brought together in one place in such usable form. It is down-to-earth, forthright, streamlined, stimulating, and instructive.

The course is planned for small groups 12 to 20 persons and consists of nine two-hour workshops. Work materials are available to any public-spirited organization at nominal cost.

### **Political Indifference**

I would like to see every local association of N.A.P.A. offer this course in practical politics, or a similar one, to its membership as part of the local education program. It is imperative that professional associations, like ours, do everything possible to enlighten their membership about our political situation and the lack of progress. If every such organization will work relentlessly along these and other lines, we might—within 10 years—reverse the trend toward political indifference or inactivity that has been with businessmen for so long.

My last point is our professional status. I am one of the many members of N.A.P.A. who believe we are a profession. I am also very certain that the founders of our association believed this to be true when they described the purchasing agent in terms of these principles:

(A) Loyalty to his company.

(B) Justice to those with whom he deals.

(C) Faith in his profession.

We can point to many accomplishments in the area of professionalism in the past and we must redouble our efforts to step-up our progress right now and in the future.

The accomplishments of our three major committees—Professional Development, VASCO, and Public Relations—are outstanding if we consider the limited funds with which they have to operate. The activities of these committees also are indicative of and have contributed much to our professional progress.

One of our most outstanding



# CONVENTION REPORT

professional accomplishments of the past has been our business survey report. Its proven accuracy over many years is an example of a truly professional accomplishment.

During the immediate past, there have been a number of accomplishments which I feel will contribute much to N.A.P.A.'s professional development in future years. The permanent convention committee is now functioning and will result in better overall conventions to meet the needs of this fast-growing association.

## 18,000 Objections

The local associations and district councils have, by almost unanimous approval, authorized the establishing of a board of basic policy to deal with certain important national matters. This places N.A.P.A. in the position of voicing almost 18,000 objections to philosophies, theories, legislation, or other matters that are not in the best interest of our free enterprise and capitalistic system. This accomplishment is real progress.

Your executive committee adopted a policy that will drastically reduce some of the traditional time-consuming duties of your president. This was done for three basic reasons:

(A) To make the president available to speak to such professional groups as NAM, Chambers of Commerce, etc.

(B) To make it more possible and practicable for capable men from small companies to serve as president.

(C) To place more responsibility on the district vice presidents for communications and coordination between the national association and the local associations.

It is also the intention of the Executive Committee that our former president and most capable executive secretary-treasurer, Howard Ahl, speak also to these professional groups.

While our accomplishments

with respect to progress professionally are numerous, this is not the time to reduce our efforts. Nor is it the time to feel that we can now coast along on these past accomplishments.

N.A.P.A. is growing and growing fast. We now have 93 local associations and almost 18,000 members. We could very easily have 125 local associations and 25,000 members five to ten years from now. I have no doubt about our future growth, since Project 15 has already contributed much during the past two years to our membership.

This certain growth, however, makes it imperative that we intensify and enlarge the scope of our thinking, locally and nationally—especially those items pertaining to a larger, more important, and more professional N.A.P.A.

Some of these are already under consideration. Others may be new and may even be considered radical. I believe, however, these items must be accomplished if our further professional development is to keep pace with our numerical growth and the increased responsibility we have to our profession and employers.

## Study Organization

For example, a special committee is now studying the size and make-up of the districts and local associations.

Some of the districts are too large—either geographically, in membership, or both—with respect to proper representation at the national level. Also, with lesser distances and fewer people involved in certain locations, better communications and certain economies could be accomplished in such district affairs as council meetings and workshops.

The very large local associations have the lowest percentage of member attendance at their meetings and functions. One obvious reason for this is that too few members can participate actively in such large associations. It is

entirely possible that the subdivision of these large local associations would result in overall membership growth and an increase in benefits.

We have one outstanding example which demonstrates the possibilities that could result from such action. Four years ago, a small group of members of the New York Association who lived and worked in the Newark, New Jersey, area decided to start a new association. The New York Association did not miss the few members that withdrew to help form this association. Yet this new association, North Jersey, has grown to more than 450 members in a little over four years. This North Jersey Association is now considering subdividing further.

Our very large associations must consider this problem seriously.

Another special committee is now making a study to determine whether N.A.P.A. should have a journal of purchasing. There is good possibility that we should have a truly professional journal—not a magazine—which would be in keeping with our aims for long-range growth. I am certain, however, that if we should ultimately decide to have a journal of purchasing, there will be objections from many local associations and editors of local magazines.

What would you think about having just one purchasing magazine in each district with all of the local associations participating in the profits on a pro-rata membership basis?

There are now 28 local purchasing magazines and the number is increasing steadily. The editors of these publications have done an outstanding job in creating and maintaining a high code of ethics in their editorial and advertising policy.

However, because of the large number, competition is keen, both for subject matter and advertising. I am of the opinion that one

(Please turn to page 240)





**Straight talk on purchasing problems from (l.) W. G. Mett, (top center) Bill Reynolds, (bottom center) John O'Leary, and (r.) Art Melka. Reynolds appeared at a general session, the others at workshops.**

**Some of purchasing's greats at the Shipman Medalists' luncheon: (l. to r.) Chris Christensen, Tom Jolly, Buck Weaver, Ralph Keefer, George Aljian, and George Renard.**



**Fred MacDougall at the workshop on reports to management.**



**Teaching purchasing was discussed by Jim Ritterskamp and Lamar Lee.**



**Frank Wean offers a few tips on how to save on transportation.**



# Management Techniques

By Robert D. Gray,

Director,  
Industrial Relations Section,  
California Institute of Technology

ONE APPROACH to the subject of management techniques would be to list and describe briefly a series of specific techniques which might be arranged alphabetically from "absenteeism, reduction of," to "zone controls." In such a list, each one of you would find techniques that could be applied in your situation, but you would be bored with many others that did not appeal to you.

All of the techniques would be spread before you, and you could select those which had the greatest appeal to you. There is no guarantee, however, that you would select the most beneficial techniques.

Management techniques are specific applications of the basic, and interrelated, techniques of problem-solving and communication.

## Problem-solving

Management literature says little about problem-solving. Most authors use the phrase "decision-making," but this sounds like a responsibility of top management rather than of lower management. Another pitfall is that the expression, may imply that all of the facts have been presented.

In using the terms "problem-solving" and "decision-making" as synonyms, I want to stress the fact that everyone in management must make decisions and solve problems. When you are asked to solve a problem or make a decision, you must be sure that all of the necessary facts have been given to you. It is dangerous to assume that someone else has assembled all of the facts.

This belief in decision-making is an over-simplification of the problem of being a good manager.

Such an over-simplification is dangerous because it suggests that the way to improve managers is to increase their ability and authority for making decisions.

Emphasis on decision-making may conceal the need for proper organization. A manager may feel that he should make decisions himself rather than delegate authority and responsibility to others. Policies and procedures may not be established because the manager believes that he should decide every case on its own merit.

At the present time, authorities on management appear to be divided. One school of thought holds that decision-making is the key to improved management.

Students of management may be seeing only part of the problem when they argue as to whether management is essentially decision-making or communication. They do not realize that they are seeing different parts of the same problem. Decision-making and communication are inseparable.

How can decisions be made without communication? In the first place, a great deal of communication must take place in order that a manager may know what decisions are required and in order that he may secure facts on which to base his decisions.

It is easy for managers to grasp the fact that decision-making follows communication. Since they must have facts on which to base a decision, communication must precede decision-making. But this is only part of the complete picture.

A frequent mistake is to overlook the need for communication after a decision has been made. Specifications for a material are

changed by engineering, but is purchasing informed? A supplier notifies purchasing that a shipment will be delayed, but is the production group notified? A manager of purchases requests a wage increase for one of his buyers. His recommendation is approved promptly. What thought is given, however, to how the employee is told about his wage increase? The manager of purchasing receives a report including recommendations for action. He studies the report carefully and approves it.

## The Manager of Purchasing

If we are to apply the management techniques of problem-solving and communication to the field of purchasing, we must first define the problem of the manager of purchasing.

I recently directed some inquiries to managers of purchasing. The intent of this inquiry was not to make a definitive study of the problems of managers of purchasing, but to secure some case material. The following replies, however, do not necessarily reflect the most important problems of managers of purchasing as a whole. For illustration, I have selected eight problems which may be widespread:

• **Shortages of materials**—Managers of purchasing said:

"My vendors never seem to meet their delivery promises."

"Everybody seems to forget the day after the order has been placed that we in purchasing have no lead time in which to get this material delivered."

• **Obsolete stocks of materials**—Managers of purchasing said:

"Management seems to consider obsolescence a personal prob-



lem of the purchasing agent, when really engineering changes cause obsolescence."

"I have become completely discouraged in trying to dispose of obsolete materials."

● **Actual cost exceeds estimate—**Managers of purchasing said:

"Folks who audit seldom consider the time lapse between the quotes and the placing of the purchase order."

"The specifications were changed by engineering twice between the time of the original quotation and final delivery."

● **Cannot secure adequate reliability—**Managers of purchasing said:

"Reliability has never been adequately spelled out in the specifications when we buy, but purchasing and our vendors are held responsible for failures."

● **High rejection rate—**Managers of purchasing said:

"Our inspectors seem to have a different set of specifications."

"There are too many gray areas in specifications."

"The vendor does not know how we are going to inspect."

"The sampling plans used distinctly favor rejection of a good lot as against acceptance of a bad lot."

● **Too many "purchasing agents" outside purchasing department—**Managers of purchasing said:

"We have published all kinds of directions, recommendations, and procedures, but engineering continues to request we confirm with purchase orders the materials which they have purchased, received, and used."

● **Too many meetings—**Managers of purchasing said:

"Between planning meetings, staff meetings, shortage meetings, conferences with vendors, and solving day-to-day problems, there is no time for constructive planning."

● **Insufficient recognition by top management—**Managers of purchasing said:

"Purchasing costs have been increasing annually over the last five years."

"Management insists that I must continue to cut costs."

"Management still believes I can hire a good buyer at \$100 a week."

"Planning meetings, to which purchasing is invited, are those announcing the completion of planning for a new program and informing purchasing what must be done. Opposition is useless."

### Problems Or Symptoms

The first step in solving a problem is to define it. In order to check the definition of a problem, it is important to ask yourself two additional questions: (1) Why is it a problem? (2) Is it the problem or is it a symptom of another problem?

It is very easy to assume, when you are faced with any of the eight problems listed above or with any similar problem, that you have a real problem which must be solved. In addition, you will often ask yourself, "What can I do to prevent a similar problem in the future?"

It is true that when any of these situations arise something must be done, and usually something must be done quickly. A manager of purchasing can work from now until the date of his retirement solving these problems, but he will be merely "putting out fires." The basic application of management techniques depends upon the manager of purchasing locating the real problem which confronts him—what causes this never-ending series of recurring problems?

### Where To Look

The real problem underlying and causing all of these specific ones is likely to exist either within the manager of purchasing himself or in the climate or setting in which the manager of purchasing works.

The success of a manager of purchasing is measured by the results secured. These results are determined by this formula:

(Intelligence + knowledge + skill) × application = Results.

The factor of intelligence, which means the ability of the manager of purchasing to learn, is an inherited quality. Although an individual cannot develop his intelligence, he does have freedom of action in using it or not using it. It is reasonable to assume that managers of purchasing have the necessary intelligence. Any lack

of results by them cannot be traced, therefore, to a lack of necessary intelligence.

The knowledge of a manager of purchasing, however, can be developed. No knowledge is inherited; all of it is acquired.

A manager of purchasing must acquire knowledge in five different fields: purchasing techniques; technical information on materials, commodities, supplies, and services purchased; management and supervisory techniques; knowledge of the company as a whole; and knowledge of general business conditions.

Every manager of purchasing has a working knowledge of purchasing techniques and of the materials and services purchased, especially if he has come up through the department. Usually he is selected because of his knowledge of purchasing techniques and materials. Every manager of purchasing, however, must be aware of changes in purchasing techniques as the result of changes in technology such as the introduction of electronic computing equipment.

Since a manager of purchasing is part of management, he must acquire a knowledge of management techniques including problem-solving and communication. He should also know many of the techniques of supervising others including but not limited to job analysis, how to interview, and how to organize, plan, control, and direct others.

A manager of purchasing must have a wide knowledge of his company or organization as a whole. He needs to know the present and future products, processes, materials, and supplies. He must understand the problems of designing, producing, and selling the products or services of the organization.

Finally, he must have a good understanding of present and future business conditions as a whole. He can contribute valuable information for making decisions such as the time and extent to which inventories of raw materials and finished products should be increased, maintained, or decreased.

In addition to the knowledge  
(Please turn to page 252)



## Do You Need Automation?

By William C. Meyer

Purchasing Agent,  
Westinghouse Electric Corp.

**A** GOOD QUESTION to ask yourself: Do I really need automation, or integrated data processing. Or are these just new buzz words some accountant has dreamed up to glamorize his work but which are of little interest to anyone else?

As we entered the twentieth century each factory worker had only 2 H.P. of energy to help him. Paper work was necessary but hadn't yet become very onerous since only one clerical worker was required for every 40 factory workers.

By 1940 one office worker was required for every ten in the shop and by 1955 this ratio had reached one clerical worker for every 6 factory workers and this trend has continued.

Certainly factory automation has made some tremendous strides and while there is still plenty of room for improvement it would appear that the office has a long way to go to catch up.

The demands of government and of management have called for a constantly increasing volume of data which must be processed into reports which show the results of past operations and serve as the basis for planning and controlling current and future operations.

### Automation Lags

I would like to be able to report that purchasing agents have been keenly aware of developments in this field—of the need for automation—and that they have been in the vanguard of progressive management people making imaginative use of all the latest electronic management tools. But the automation surveys conducted by the N.A.P.A. data

processing committee indicate that this is far from the actual situation.

With a few notable exceptions, most of us not only haven't done much real automating of either the purchasing function or the broader field of materials management—we haven't even been doing any intelligent thinking about them. We had better start, for a sound knowledge of automation and what it can do for your company may well prove to be the key to material management.

There is a lot more to automation than handling a lot of data and turning out a host of reports. Although there is some fancy equipment available perhaps we can do a little automation without any special equipment.

For this purpose let us take some liberty with our definition of automation and define it as separating the routine and logical work from the creative work in such a way that the routine work can be handled by less talented, less expensive clerical employees. Perhaps the simplest form of this would occur in a one-man purchasing department in which many routine duties could be handled by a secretary, without any supervision, based on precise written instructions. Larger departments can set up a special clerical group to handle such work. When we begin to transfer this work to machines we are really on our way to automation.

The best place to start is to take a thorough look at your systems, methods and procedures. Flow chart every one of them carefully. Make sure you include all exceptions to the usual way of doing things because one way

or another you will have to provide for these exceptions. Then eliminate any unnecessary steps, combine others where possible and simplify the system as much as you can.

Now assume that you are going to do as much of this work as possible by machine (whether you really plan to or not). How would your flow chart look? At this point don't worry about specific hardware. While there will still be plenty of developments in equipment for office automation, hardware is far ahead of our office systems. Plan your chart in such a way that any work for which simple concise instructions can be written, or which can be expressed as a mathematical formula could be performed by machine. This includes just about everything except work of a creative nature or where judgment is concerned.

### Check Organization Chart

Using this approach may help you avoid overlooking some areas which can be automated and, should you initially operate only with people, will simplify the transition to machine processing if and when such action becomes possible or feasible.

Also look at your present organization chart to see whether it is proper and adequate to handle the revised system. If it isn't, draw an ideal organization plan and, as opportunity presents itself, see that the changes you make fit your ideal plan.

So far there is nothing new—you have carefully checked over your department by taking a critical look, albeit with automation in mind, at your organiza-





**R. J. Hood, left, picks up a few tips on how to sell value analysis to company management from Bill Pierce.**



**East Coasters Fred Schmitt, Gailon Fordyce and Bill Old enjoy the West Coast.**



**Art Pearson's talk on evaluating performance drew a good crowd. Marc Brooks is at right.**



**Men of many moods at an after-breakfast workshop.**



**A fine Inform-A-Show was opened with a flourish. As part of the ceremony, Miss Cecilia DeMille, granddaughter of the great producer, cuts the ribbon to the show, assisted by civic and N.A.P.A. dignitaries.**



tion, forms, systems, procedures, methods, layout, data flow and job descriptions and have corrected those things which you saw in the process but didn't like. And you have prepared a policy and procedures manual so there can be no mistake about how you plan to operate.

What is next?

For some the answer may be "nothing". You may find that a review such as outlined has made your department so efficient in comparison to what it was, that further automation isn't really needed and cannot be justified. This is in itself one of the great benefits of an automation survey, namely, that it forces a very critical analysis of the way you have been doing business.

### **"Automation With People"**

Your next step should be to see whether you are already using what I like to call "automation with people" as fully as you could be. Are you using traveling or permanent requisitions? If you are, are you using them only for stores items or are you using them for all items that are at all repetitive—that are purchased say at least three or four times a year. Or if your business is such that an item, once ordered, is likely to repeat you can prepare a permanent requisition for your first requirement and at each general review you can purge those items which have not repeated within a specified time—say within a year.

To set up permanent requisitions for stores items most effectively a complete stock list or catalogue and a good coding system are required. Each stock item should be given its own code number. It is important to allow large enough gaps between successive code numbers for current items to permit insertion of new numbers as new items are added to stock. In preparing the code, consideration should be given to

the needs of other departments, such as stores, accounting, etc. The code number itself should contain as much information as possible without being any longer than absolutely necessary. It would be desirable to tie the code number to the buyer to the commodity family or group, subgroup and so on, subdividing into the number of categories for which you expect you might ever want tabulated information. It is usually better not to copy what someone else has done—tailor your code for your own needs and those of your company—but make sure it will cover your future needs as well. Straight numeric codes are preferred since they can be handled faster by automatic equipment—especially of the tabulating variety.

The buyer can throw away his price cards since the permanent requisition is in effect a complete price record and also an accurate activity record. He can call for all the permanent requisitions in a given commodity group or subgroup (this is one of the reasons you coded them as you did) and in many cases negotiate for a semi-annual or annual requirement of the whole group as a package. If you haven't tried it, you will be amazed at the interest your suppliers show when offered such volume and they usually sharpen their pencil to prove it.

Permanent requisitions for critical items, or items with special characteristics, are clearly marked with a notation that they are to be referred to the buyer each time that item is required. The rest he "programs"; that is he indicates in advance the vendor from whom the item is to be purchased or the manner in which business is to be divided among multiple sources. These go back to file to be released by a clerk to the order typist when material is required. The buyer needn't look at them again until his next annual review unless

something unusual develops.

Obviously there will be some items that cannot be programmed in this way but it is surprising how many can and they usually turn out to be those items which represent a high volume of orders but with a relatively low dollar value per order. The buyer can stagger his negotiations on his various commodity families throughout the year to avoid work load peaks.

Now let's take a look at expediting. The items you purchase can be divided into two groups. In the first, belong all the items which experience shows to be critical or very important such that they need to be expedited almost from the time they are placed. Have these items followed closely. Everything else goes into group two, and this will be by far the larger group. You can expect that 85% plus of these orders will come in when you ask for them if you stick reasonably close to lead time. Time or money need not be spent expediting them until they become overdue—that's why you carry safety stock. If you aren't getting this kind of performance on simple, routine items you had better look for some new suppliers.

### **Take a Critical Look**

The same critical, imaginative look at systems, methods organization and procedure is essential regardless of the physical means by which automation is to be accomplished. The only real difference is that as the degree of automation increases this becomes increasingly important.

Few, if any, purchasing departments can justify even a minimum tabulating installation strictly for their own use unless they are also responsible for some other function such as stores. This, however, is a very poor excuse for failing to thoroughly investigate what E.A.M.

(Please turn to page 276)





The warm Southern California weather caused many P.A.'s to don white dinner jackets for the annual banquet.

Lending charm to the banquet dais was lovely Mrs. Howard Ahl, wife of N.A.P.A.'s hard-working executive-secretary-treasurer.



Enjoying banquet banter: Conover-Mast P.A. Walt Willets (l.) and Int'l Paper's Erhard Karl.



On the dais: Outgoing N.A.P.A. President Tom English (r.) and feature banquet speaker, actor Ronald Reagan, with his fetching wife.



President Boney was caught in a pensive mood, but his vivacious Ollie kept on enjoying herself.



Hardly anyone missed the banquet; atmosphere of good cheer was helped by fine food, excellent speakers.



## Is Purchasing Achieving Top-Management Status?

By Jack O. Vance, Principal,  
McKinsey & Co., Inc.

**I**F PURCHASING has achieved top management status, it would be most evident by membership on an executive committee. I think it can also be demonstrated if purchasing executives participate in the following decisions:

**(1) Source of capital decisions.** Frequently leading into this question for a purchasing executive is the problem of whether to buy or lease equipment. He should consider the availability of capital from other sources, such as bank borrowings, and private or public offerings of stock.

**(2) Make or buy decisions.** These are also logical outgrowths of the purchasing function. They can involve analyses of the depth and strength of the market, questions of investment capital, cash flow and production facilities.

**(3) Marketing and new product strategy.** This is further away from the purchasing function, but frequently purchasing is asked to analyze the relative competitive advantages of product components and material specifications. This can take the purchasing executive into the general considerations of introductory marketing costs, pricing strategy and field sales organization.

**(4) Mergers and acquisitions.** This area is still further from the usual purchasing activities. Many top managements, however, believe, purchasing is well informed and sensitive to external environment. It can make a valuable contribution to the review of a company for acquisition.

These four examples are not all-inclusive. They are only mentioned to qualify the type of decision that purchasing executives have played in reaching "Top Management Status."

If a corporation only expanded for "normal growth," this would produce an impressive demand for managers. However, we find companies accelerate growth through a policy of integration and diversification. Their executive needs increase accordingly. This growth causes almost all corporations to search for more "succession channels" within their ranks, from purchasing as well as the other activities in the business.

To be realistic, the more important purchasing is to the company, the more likely its recognition. This will, however, not necessarily be measured in terms of dollars of total manufactured cost represented by purchased components. In many instances, the importance of purchasing must be measured by purchasing research, skillful knowledge of timely sources, and relationships with vendors.

In stating the promotional growth climate for executive talent, we must emphasize that this in no way supplants the need for individual initiative and creativity.

Certain factors create opportunities for purchasing:

**(1) Contract buying and total company financial planning.** A number of companies are placing annual contracts with their suppliers. This is an arrangement that must be carefully analyzed; and very obviously, leads the purchasing executive into a review of its impact on the company's financial budget. This leads them to work more closely with the chief financial officer. This commitment typically comes before some type of senior management committee: It provides the purchasing executive a top manage-

ment exposure in reviewing the decision.

**(2) Purchasing research, engineering and production planning liaison.** Today, many products are produced in a "scientific job shop," often from new materials or unique components. There is frequently no logical demarcation between the purchasing executive's analysis of product specifications and the related design modification that affect engineering concepts. This whole process of design procurement and manufacturing is squeezed together. The closely-knit, well-communicated working relationship has permitted a number of purchasing executives to broaden the scope of their operations.

**(3) Electronic data processing and centralized management control centers.** Computers tend to centralize data information systems involving sales, accounting, production scheduling and inventory records. Purchasing is only concerned with a portion of this data, but it has the opportunity to become familiar with the entire data handling process. In several cases, the systems for the entire company have been consolidated as one organization unit administered by what was formerly the purchasing department.

**(4) Vertical integration by merger with suppliers.** This is often one of the first-explored avenues for expansion. Purchasing executives help evaluate sources of supply as acquisitions. In a number of instances, this has allowed purchasing people to not only establish the initial contact, but to also become involved in carrying through the bulk of the merger negotiations. Once general skill has been evidenced in this re-





Constant activity at the Crown-Zellerbach Corp. booth proves first prize as "most informative" booth at the Inform-A-Show was well-deserved.



Tired as they were after the day's outing, the ladies turned out sparkling and refreshed for the annual banquet and dance. Fashion shows, luncheons, sightseeing tours and shopping kept ladies busy while convention was under way.



Ex-president Tom English receives a portrait of himself from Jim Stewart, head of the Houston PAA. Artist-P.A. P. H. Holley watches.



Jerry O'Leary, able staff member of the National, keeps track of the many convention details.



Some high-jinks are in order as John C. Berry, Paisley Boney, and C. Warner McVicar get together for the Hendricks Club annual dinner.



gard, the purchasing executive joins the management team and is called upon to aid in future acquisitions.

(5) **Recognition of purchasing's exposure to sales management.** In many organizations, new sales managers are only appointed after they have served a lengthy tour of duty in a sales territory. Several companies, however, pressed hard by growth and the need for marketing management, have reached for men who spent years observing marketing techniques in purchasing.

#### **Getting Ideas Accepted**

One of the finest executive talents is skill in gracefully selling ideas and gaining their acceptance.

I would like to share with you four approaches that we have seen capable executives utilizing in ex-

pressing their ideas. **The first of these is to make any new idea or recommendation stand the test of going on paper before your subordinates to gain their honest criticism.** This both makes you crystallize your ideas by putting them on paper and encourages subordinates as equal team members to constructively criticize.

**Second—be very sure that ideas are so stated that they do stimulate your associates and encourage them also to creativity.** Many times, your degree of positiveness and reaction to questions can either curtail or encourage your associates' suggestions. It's important not to just be the star, but to be the catalyst that generates creativity in others.

**Third—channel your ideas carefully without "head jumping."** This is important because frequently, the best of these ideas

involve other executives' departments, or at least, suggest a new relationship of your function to their activities. One of the best approaches is to let your superior suggest and consult with you on the approach that you might use in submitting these ideas. Yes, and even let him take the credit; because sooner or later, the true source of brilliance is usually revealed.

**Fourth and finally—explore both the technical and personality background on anything before even being constructively critical.** Too frequently, the personality of the fellow who is going to be affected is overlooked in the zeal to express new thinking. The possible human reaction and individual positions strengthened or threatened must be thoroughly analyzed before you can be certain of the best approach to adopt.

## **Is Foreign Competition Welcome?**

**F**EW BUSINESSMEN will object to competition. On a lofty level, we say the engines of progress are fueled by competition. Without competition, we believe mediocrity and complacency may take over at the expense of the customer. So, in Purchasing, "three bids" has become the popular slogan.

Most of us also would hold still for foreign competition, because international trade and world peace are so closely linked. We cannot have our cake and eat it, too; international trade is exports and imports. We cannot logically encourage one and bar the other.

Some businessmen believe that tranquilizing tariffs are the best remedy for foreign competition. Others think the modernization of our industrial plants and the elimination of featherbedding in all costs of doing business are the cure.

Imports usually are a sign of national good health—a willingness to trade; and the best preventative for any serious infection that may be carried by competitive imports is to meet them at the port of entry with lower domestic prices. We no longer live in a producer-consumer economy, insulated by oceans. The St. Lawrence Seaway carries imports, as well as exports.

#### **Compete or Die**

If United States industry must be competitive or die, then purchasing from a foreign source that offers better values might make you a pall-bearer, as some claim. Such purchases might also be a wonder drug that halts the spread of mediocre performance and complacency about costs and prices.

Two general statements are made so frequently concerning

competition from abroad that they are being paraded as facts: One is that the foreign producers compete solely on price; and, two, that the differential in labor costs constitutes their only, or principal, advantage.

There is enough truth in those statements to make them plausible. But, we can miss the boat by banking on a "best in the world" opinion of our own production facilities and management abilities and, through prejudice or lack of information, downgrading the intelligence, skills and facilities of our competitors in other countries.

We should keep in mind that Europe is the birthplace of our own chemical industry, as well as of many other industries, such as precision instruments and machines. Mark Covell, of Union Electric Company, put it well at the Utility Group's Spring meet-



ing, when he said: "No one is going to dispute that we are faced with the toughest sort of competition with the rest of the world today, from people who are every bit as intelligent as we are. From the reports we are getting, they are becoming better equipped, and they are just as intent on improving their own lot as we are. So, don't underestimate them."

A breakdown of the manufacturing dollar spent in European nations, such as Belgium, Germany, Switzerland, runs: 65% for materials, 11% for labor, 24% for overhead.

In the United States, the figures are reported to be: 53% for materials, 18% for labor, 29% for overhead.

### **It's a Serious Problem**

Comparing those percentages, therefore, we might say their price advantage is in labor and overhead cost—the heavier the material mix in the cost, the lower the advantage. They seem to have a 30% to 40% price advantage, when competing for long-run quantities of small precision parts, and in the production of equipment and components that have a heavy labor load. Some of the advantage foreign companies enjoy, it is true, is in lower labor rates, but much of it has an even more serious aspect.

A quite recent survey indicates that unit labor costs in the European Common Market (France, Germany, Italy, Holland and Belgium) have declined 12% since 1953, while ours were going up 3%. Those countries have increased the gap between their costs and our costs. So, their competition became more noticeable over here, as they reached for expanded markets. With us, a lower price has become so unusual, it could qualify for a place in the zoo.

On February 15, Paul Farrell of Purchasing Magazine, reported that a survey among representative purchasing executives showed 28% of them were currently buying items from foreign suppliers that previously had been purchased from domestic sources.

The American Management Association now has an International

Management Division that is featuring: International Operations and World-Wide Purchasing. The A.M.A. says: "Alert American businesses are moving huge amounts of men, machinery, and money overseas, to strengthen their competitive position in the race for world markets." It is estimated that three thousand U.S.A. companies now have branch plants or affiliates abroad.

Any company that is operating abroad, to sell abroad, is going to buy abroad. That would be good Trade Relations—our old friend Reciprocity. The next step is the one that has hair-raising possibilities. Suppose the company produces abroad, and buys abroad to get the advantages of low costs and, then, sells over here to get the advantage of higher prices. What then?

The president of a large domestic business enterprise, with plants abroad, declares: "Thus far, we have not felt it necessary to manufacture abroad for the purpose of importing back into the United States. I sincerely hope we shall not see that day come."

But, another says: "We have the most commanding manufacturing position in diversified, low-labor-cost areas of any similar company in the world, and will distribute our foreign-made products in the United States."

The United States Government uses a "Buy American" preference in its purchasing. It amounts to 10% and, when the domestic competitor is located in an area of unemployment, the price preferential in his favor may be increased. But there is some hocus-focus on the 10% preference, because the product sold as American is permitted to include up to as much as 50% of foreign-made materials and components.

This problem of identifying a "foreign" product, when sold by a domestic supplier, can be complicated. Let us take, as an example, your watch.

The fairly good foreign-made watch movement leaps about \$4 duty to get into our market. The duty on parts comes to 55% of the customs invoice value, which works out to a lower figure. The Virgin Islands imposes an import

duty of 6% on everything that enters the country. And, being a United States possession, it is permitted to ship to the U.S., free of any duty, if 50% of the value of the product is the cost of work performed on it in the Islands. So, under that setup, parts from Japan, assembled and adjusted in the Virgin Islands, may come into the United States duty free.

Consequently, the United States manufacturer may make and buy in several combinations. He can: Make American; make American, with imported parts; buy foreign, and pay duty; make abroad and pay duty. Or, he may buy parts abroad, assemble in Virgin Islands, and avoid duty.

### **Hazards to Hurdle**

Nowadays, our large business organizations no longer have export departments. Instead, they have International Divisions. They well know the deer paths and salt licks of foreign trade. But, that is not true of the 85% of you, whose companies have no branch plant or affiliate.

Cost of purchasing and cost of possession are likely to provide you with a new experience. Purchasing abroad generally means longer lead time; and, as your lead time lengthens, your inventory level will be higher. In fact, your customary "ordering quantities" may have to be changed.

A visit to your supplier is always advisable. The employment of an export-import broker is strongly recommended. And, customs, tariff, and legal aid may be essential. Moreover, the United States buyer in foreign markets must keep fully informed on economic and political conditions abroad, as well as at home.

When everything is equal, which is rare, how much preference should satisfy our prejudice? Government guidance should be helpful. When a foreign source of supply is able to jump all the hurdles, he certainly should be welcome—at least, to be considered as a competitive source of supply.

—By George Renard, Associate Editor for Purchasing Economics, *The Journal of Commerce*.



## Evaluating Purchasing Performance

**T**HERE is no single answer to the problem of evaluation of purchasing performance. Committees of N.A.P.A. have been working on this project since the Twenties. Progress has been held back by:

1. A search for a single quick and easy evaluation technique.
2. Failure to realize that evaluation is of necessity a part of the climate in which purchasing operates.

It is well to remember that evaluation programs must be built less on tradition and more on theory and experimentation. Evaluation means many things to many people. Two common ideas should be mentioned. The first is auditing. The American Society of Internal Auditors has a good booklet on this subject. While auditing is useful, it is not evaluation. It is only a step toward evaluation. The same can be said for measurement of purchasing. Some think this is evaluation but rather it is a useful tool in the field of evaluation. What then is evaluation? It is the maturing of purchasing as a part of management; it can be called "operation bootstrap." A better definition is "value analysis applied to purchasing management."

Evaluation can only be carried out as one phase of a three-part program consisting of:

- (1) Understanding the purchasing climate.
- (2) Development of procurement planning.
- (3) The evaluation of the successful completion of the plans.

Management is a planning-control function, evaluation is essential to it. Evaluation can best

be made in the same organization determining the improvement at one period of time against another period. Management is essentially responsible for the climate through its policy making functions.

A good purchasing climate is something more than just having a purchasing department place orders. It is a way of thinking. The first step in right thinking is the asking of the right questions:

(1) What are all of the procurement functions in your specific organization?

(2) Are these functions of purchasing performed by the purchasing department or material division?

(3) Do vendors' representatives get what they consider a satisfactory hearing from the purchasing department or is there back door selling?

(4) Do requisitions specify vendors? Or do using departments have faith in purchasing?

(5) Are requirements made known to purchasing at the earliest possible time to give it enough time to fully apply its ability and resources?

(6) Does the purchasing department have the personnel to do the job?

(7) What do the managers of other departments think of purchasing's ability?

(8) Is there "breathing space" to take the time and do the things that develop better profit making purchasing practices — enough people, enough resources and flexibility?

(9) Does purchasing have the stature to help management plan so that it can properly discharge its responsibilities?

(10) Does purchasing contribute to cost reductions and profit improvement?

Question yourself on these 10 goals and review them each year, you may want to change a few:

**(1) Coordination.** Extensive communication laterally throughout the engineering, quality control, production and finance departments is essential to intelligent procurement. So is communication with vendors.

**(2) Mature purchasing organization.** Proper planning eliminates most emergencies. Concentrate on big problems, purchasing efforts should be focused on dollars committed rather than on the basis of pieces of paper handled.

**(3) Price targets for procurement.** Fifteen percent of items account for eighty percent of the money.

**(4) Value—long term.** Low over-all costs in the final product.

**(5) Quality.** Proper establishment of and negotiation of quality into the product.

**(6) Negotiation.** Complete investigation of all aspects of procurement.

**(7) Proficiency in performance.** Professional development, N.A.P.A.

**(8) Operating cost.** What costs should be used?

**(9) Work Load Index.** Which figures should be used and how?

**(10) Management Contribution.** Tangible & intangible—by management to purchasing and from purchasing to management.

We cannot cover all ten planning areas in this short session so we will look at just two of them—coordination and work load indexes.

Have you checked to see how



many of your people sit on company committees? How well do your buyers work with the other company departments? These departments are purchasing's customers; it is smart to keep them happy. Coordination with vendors should also be reviewed. Vendor product improvement meetings are very useful as also are periodic reviews of bidding and negotiating practice. Vendor performance can be charted in several areas such as quality through receiving rejection records and a record of deviation from promised delivery dates.

Once or twice a year it is well to run a summary of incidence of order placement. This will show

you the percentage of orders and the percentage of total dollars placed in various dollar categories. If there are too many small orders, procedures should be changed.

Work load on a purchase order per buyer basis is also useful combined with open orders per expeditor and backlog of requisition in terms of average day's work. A chart with these three curves plotted will enable supervision to shift people to handle work loads as they build up.

Another activity indicator is built around a chart of three curves: cost to spend a dollar, hours per purchase order and average value of each purchase

order. On this chart the cost to spend a dollar should be neither too high nor too low. It costs money to save money and this should be borne out by this curve. A supporting bit of evidence will come from the hours per order. The work load in dollars per order is direct evidence that small dollar procurements are under control if the value is high and just the opposite if low.

These are just a few examples of the use of charts to evaluate performance. There are many such charting techniques that can be developed.

—By Arthur G. Pearson, Procurement Specialist, Lockheed Aircraft Corporation.

## The P.A.'s Role in Price Forecasting

**T**HE AVAILABILITY and intelligent use of price forecasts can be of great value in most business enterprises. Future price considerations affecting purchased commodities and services have an important bearing on basic management policy. Forecasting of prices has an influence on the following matters of management decision:

**(1) Production planning is often vitally affected by price forecasts.** The product lines selected for manufacture cannot be intelligently determined without forecasting of this kind. Likewise, expansion of existing product lines and questions of diversification must be decided in the light of this information, along with market factors, the results of consumer research, technological considerations, etc.

**(2) Short range price forecasting is a matter of daily necessity** in many businesses in determining the inventory of finished and semi-finished goods and in establishing manufacturing schedules. Prices and manufacturing schedules follow a seasonal pattern. The probability of price advances or declines is often important in setting the production schedule.

**(3) Price forecasts for purchased goods and services** are important elements in determining pricing policy. These must be studied, along with general market demand, competition (both foreign and domestic), labor costs, and other pertinent elements, before management can reach a sound pricing policy for its goods and services.

This forecasting of prices of purchased items is necessary to effective management. The next question is: Who should be primarily responsible for such forecasting? Who is best prepared to predict the price of purchased items?

The logical and inevitable answer to the query is that purchasing is the best source for this vital information. But procurement personnel must keep themselves informed about important matters affecting price trends of the goods and services they buy.

If the purchasing agent wants to do an effective job for his management in this area, constant attention to these items is necessary:

**(1)** The purchasing agent should study the significant considerations affecting purchased

items. These include changes in supply and demand for the particular commodity and technological changes.

**(2)** Attention should be given to any important changes in suppliers' material and labor costs.

**(3)** The buyer should watch for "straws in the wind"—the many indications of price weakness or strength in the material being considered.

How can the purchasing agent most effectively keep his management informed of price forecasts?

In most commodities, there are certain known factors of major significance. These should be reported to management as they develop. In some instances, where price trends are highly important, a periodic standardized report form might be used. An example of such reports might be national inventories of various commodities, such as coal, oil, kraft linerboard, sugar, etc.

Aside from these known major factors, the purchasing agent should report on the "straws in the wind" mentioned earlier.

—By Lyle E. Treadway, Purchasing Agent, The Federal Glass Company.



## Is Expediting a Purchasing Function?

**H**ow many times during the regular course of business has the purchasing department been asked to expedite a production material order—either in the vendor's plant if it is in the process of manufacture, or enroute if it has been shipped?

We should not suppose that once an order has been placed, the purchasing department has no further responsibility. We are becoming more inventory conscious and when the purchasing agent is not given sufficient lead time to obtain production materials, he automatically becomes an expeditor.

The objective of any purchasing agent or buyer is delivery of an order at the right time and the right place. If a supplier has been selected on the basis of his reliability, then theoretically follow-up is more or less a routine matter and in many cases is not necessary at all.

### **Follow-Up Is Essential**

Every company, however, finds that follow-up of orders is essential, especially where tight production schedules must be met.

The purchasing agent or buyer, therefore, is the most logical person to be given the responsibility for following up or expediting an order.

Some companies place this responsibility on the production planning or control division. They believe that the production planning or control division will be best able to make the required adjustments and is likely to be more aggressive in preventing delays. This reasoning, however, is contrary to the sound principle

of organization that requires authority to equal responsibility.

In addition, suppliers are confused when they are required to deal with two or more parties in the same company. This often causes further unnecessary delays.

### **Traveling Expeditors**

During World War II, purchasing departments were unusually concerned over the time of delivery and the practice of expediting came into general use. This procedure is still being followed today and many companies have expeditors constantly traveling among their suppliers.

Although some purchasing men use the terms "follow-up" and "expediting" interchangeably, there is a distinct difference between the two. Follow-up is defined as "pertaining to repeated action," while expediting is defined as "accelerating the process or progress."

Some sort of regular contact with a supplier is necessary. The purchasing agent or buyer—since he has this contact with the supplier or his representative—is in a position to obtain pertinent information on any given order. In many instances, he can expedite an order without visiting the supplier's plant, by merely calling him on the telephone.

### **Visit Suppliers' Plants**

Only in extreme emergencies is it necessary for the expeditor to stay at a supplier's plant and follow through an order. But under normal conditions where a supplier has furnished materials over a long period of time and

is cognizant of his customer's needs, very little, if any, expediting is necessary.

The function of expediting, does not stop at a supplier's plant. Rail and motor carriers, as well as airlines and steam navigation lines, are very important factors in the delivery of merchandise to meet production schedules. With the terrific load placed on carriers today, expediting becomes an important job which can best be handled by purchasing department personnel.

### **Tracing Shipments**

Many companies place this responsibility on their traffic departments. If a company is large enough and has a full time traffic department purchasing can be relieved of tracing and locating shipments. But in the majority of companies, the expediting function should be the responsibility of purchasing.

Representatives of transportation companies often call on purchasing, as well as the traffic and shipping departments, and are acquainted with the purchasing agent or buyer.

### **Must Know Transportation**

Since purchasing is primarily interested in having shipments arrive within a specified time, the purchasing agent or buyer must have a basic knowledge of transportation and expediting. We believe, therefore that the "follow-up" or "expediting" function is definitely a part of any purchasing operation.

—By W. G. Mett, Purchasing Agent, Burlington Mills, Incorporated, Burlington, Wis.





A tradition: the indispensable source for information on registrants was Purchasing Magazine's directory board.



Business Survey Committee Chairman Chet Ogden ponders the economic situation as he awaits introduction by Vic Quam.



Inform-A-Show visitors returned home with actual samples of products displayed, like this square of Flintkote insulation board.

Tremendous interest generated by workshop sessions is reflected in faces of Galen Andrews and Doug Smith (foreground).



Weighing a poser from the audience at a workshop on selecting purchasing personnel are (l. to r.), Mrs. Du Chene, W. R. Stelzer, and Bill Pierce, moderator.

Pulchritude was mixed with practicality at many booths of the Inform-A-Show.





## Handling Contracts and Invoices

I'D like to cover two items under the general topic "Are These Purchasing Functions?" The first is contract writing and the second is invoice checking.

**Contract Writing**—In our operation, contract writing is a "once-every-so-often" purchasing function. We seldom use contracts, and have never used them in our production buying because we do not feel that contracts lend themselves to a job-shop type of operation.

When contracts are needed, then contract writing is a purchasing function. The only time that this is not true is for construction work. When a new building, an addition, or an alteration to an existing building is being contemplated and a contract is to be signed, it is the responsibility of the plant engineering dept.

We start with the basic premise that purchasing is responsible for all buying or commitments. Thus it is purchasing's responsibility to write contracts.

When contract writing is necessary, we would use either a form submitted by the vendor—properly OK'd by our legal section—or we would send a "draft" to the legal section for correct terminology, etc. At the time a contract is signed, we would issue a purchase order for control purposes. The contract becomes part of the purchase order.

Aeroquip Corporation is a multi-divisional corporation with decentralized purchasing for all but one item. The divisional purchasing personnel are investigating the possibilities of overall corporate advantages through the use of contracts on some items. If it can be worked out, then it would be to our mutual advantage

and show a profit improvement. It is the responsibility of purchasing to investigate this area to determine the advantages or disadvantages to the corporate operation.

**Invoice Checking**—This is not a purchasing function except for instances of price discrepancy. We send accounting a copy of all purchase orders, properly priced.

Accounting receives all invoices and packing slips. These two items are brought together and checked for count and description and to verify receipt of goods. The invoice is then checked against the price shown on the purchase order.

If there is no discrepancy, the invoice is processed for payment.

If there is a difference between the price shown on the order and that shown on the invoice, the invoice is sent to purchasing for action. Purchasing, in turn, either OK's the price and passes the invoice back to accounting, questions the vendor about the discrepancy, or requests that the invoice be returned to the vendor.

Accounting is responsible for payment of all monies committed by the company and thus must check the extension of the unit price. Since it does this, it is in a good position to check the unit price against the purchase order. If purchasing made this check, then it would mean an extra paper handling and shuffling operation in the office. Eliminating this operation results in an overall cost savings.

Up to the beginning of this month, we were handling our "local" procurement by using blanket orders. This required, on the items so procured, invoice checking by purchasing. We have changed our system, eliminated this check, and streamlined the entire operation.

—By Lewis A. Greene, Purchasing Manager, Aeroquip Corp., Jackson Division.

## How to Cut Inventories

THE WORD "inventory" can mean many things. Webster's definitions are: "(1) a catalog or schedule of the property of a person or an estate, hence an itemized list of goods with their estimated worth. An annual account of stock taken in any business; (2) goods or stock comprising an inventory." I'd like to cover the second definition.

Our job as material managers is an ever-changing one. Not too many years ago, our interests were directed toward putting all items under inventory control. Today's conditions may require overcoming some of our established inventory habits.

We may need to generate a new spirit of cooperation between our various departments and executives. It could be that we are too

conservative in our sales forecast, causing many out of stock conditions, or we may be over-optimistic in our sales forecast which is an even more expensive approach.

### Set Production Schedules

Tying up excessive capital in inventory, whether in raw materials or finished goods, reduces profit. And the size of the product, the method used in its manufacture, and the way it is sold all have a great effect on our production requirements.

If fixed production schedules can be set, direct shipments from supplier to line consumption is possible. But in many operations, inventories of raw material are unusual, with the buying done for



the job. Small businessmen are faced with the problem of limited capital. Having their money tied up in slow moving inventory is out of the question.

To reduce invested capital in inventory, some have used the approach "let the vendor carry our inventory." This method is practical for fixed production schedules and for small business.

### Planning Is Required

For example, probably the most universal item is packing containers. The anticipated use of packing containers can be planned at the same time we plan our production schedule. Releasing from the vendor's inventory takes planning and coordinating, but it can be done.

Under very favorable conditions, items such as chemicals, oils, MRO supplies, and office supplies can be stocked by vendors. But be sure that in your effort to reduce inventory, you do not increase the cost of your system to a point greater than the amount you intend to save.

How do we go about selecting items that will make our efforts worthwhile? In order to do an effective job in reducing value of inventory (by changing to direct shipments from vendor to work in process), it is important to

analyze the items you carry in inventory.

- Pick high value and high production requirements. Items of low value and low production will not affect your inventory enough to make it worthwhile.

- The item should not be one on which inspection rejections are high. Your quality control department and vendor analysis records will help you pick these items.

- There should be two or more vendors supplying your requirements. This is necessary because you cannot gamble with only one source.

- It should be a standard manufactured item.

How do manufacturers go about the paper work necessary for direct shipments from manufacturer to production line? There are probably three methods used most frequently: (A) blanket order; (B) standard order; and (C) cash.

The blanket order method has the greater advantage for both the manufacturer and the vendor. It allows the vendors to produce in larger quantities—which reduces their set-up costs. Leveling out the labor force is another advantage. Finally it permits the manufacture of additional products over the same equipment.

The standard order method is not new, nor is purchasing with

cash off the shelf. The important thing to keep in mind is the total cost of raw material.

Where you are located in relation to your supplier has a great deal to do with the effective use of direct shipment from vendor to producer. Transportation charges may make the cost of *not* carrying any inventory high. Many plants have been relocated to overcome the high cost of transportation and inventory. Of course, having a supplier next door is the ideal situation.

When should we consider *not* carrying all items in inventory?

- (1) When we have a set production schedule. When all concerned are aware of the importance of profit to inventory.

- (2) When we have items of high value or high demand manufactured to a standard specification.

- (3) When we have more than one supplier.

- (4) When transportation is available without interruption.

- (5) When the cost of not carrying inventory reduces our burden.

- (6) When down-time and unnecessary paper work to properly schedule material have been minimized.

—By W. C. Allen, Purchasing Agent, Utah Power & Light Company, Salt Lake City, Utah.

## Inventory Control for Small Companies

By Robert J. Sutton, Director of Purchases, Atkins Saw Div., Borg Warner Corp.

**I**NVENTORY has often been referred to as the graveyard of American business. It is true that some businesses built their foundations and early successes on lucky speculation in inventory, but for every such success many others were wrecked by price declines and changing markets. The recent trend to shrinking profit margins makes a more careful and scientific approach to the question of inventory and inventory controls mandatory.

Guarding, handling, and accounting for money has been the subject of intensive planning;

numerous methods have been devised for the treatment of money. Money, however, is only a symbol of the material things it will buy—like inventory.

When cash is converted to inventory, comprehensive records must be compiled and maintained to present the facts for management to evaluate. Even a casual glance at the balance sheets of most companies reveals that business organizations have as much as 50% of their capital invested in inventory. To control this major corporate asset, many systems have been devised. To be of any

use to management however, each of these systems must answer certain analytical questions, including "What is in stock?", "Is it moving?", "Is it too much?", and "What is on order?"

### Answers Needed

The need for fast, accurate, hard-hitting answers to these questions is fundamental to an effective control system. Modern business managers demand that excessive inventories be avoided because operating results are so much better when there is an ex-



## CONVENTION REPORT

cess of cash rather than an excess of inventory. The difference is that the cost of maintenance, which is made up of obsolescence, interest, depreciation, and miscellaneous charges (cost of storage, warehouse space, insurance, and taxes).

In our business, this cost is 20% of the value of the inventory; in other industries, it runs as high as 25%. The catch is that minimum investments in inventory must be attained without incurring excessive "stock-out" positions. To a greater or lesser degree, most companies have comparable objectives and similar problems.

All inventory control systems provide for recording receipts and withdrawals, quantities on hand, expected delivery dates, and current stock balances. All systems provide for a reorder point based on maximum and minimum limits or on individual calculations. Such a plan can be run manually as it requires only a man with a pencil and a printed form. This is the way most systems are maintained—using simple filing methods, Wheel-dex, Kardex, ViseRecord, or control boards to provide ready access to an individual item.

### **Transcribing Data**

Some systems have gone one step further by using posting machines to transcribe data to control sheets. These systems are slightly faster, considerably more accurate, but they still remain in the manual classification.

In recent years, managers of both large and small companies have been forced to search for new methods to handle the inventory control function. Their investigations have been motivated by pressures to reduce clerical costs and to obtain perceptive answers to company problems. The search has led them to consider automated programs using punched cards or tapes.

In general, these systems are

designed to handle masses of raw data efficiently and economically. It must be recognized at the outset, however, that these programs are only practical if the machines can be kept busy over 80% of the time.

### **Is Volume Sufficient**

In a small company, the volume of data involved in an inventory control system is usually not sufficient to utilize high-speed equipment. But every day, more small companies are converting manual systems to automated programs.

While no single department of a small company may be generate enough to warrant installing punch card or tape machines, it is not unusual to group various clerical functions to obtain the required volume. Manual methods for handling payroll, inventory control, cost data, sales statistics, accounts payable, cash receipts, cash disbursements, general journal and general ledger can all be converted successfully to electronic equipment. In nearly all instances, such comprehensive programs can and should be justified on the basis of cost alone.

The success of these conversions is commensurate with the soundness of the feasibility study made in advance of the installation. From a strict "save money" basis, the study should indicate:

(1) **Whether there is sufficient volume to justify renting the machines.**

(2) **Whether there will be an actual savings after the machine rental.**

This study should be a realistic estimate. It is usually a good idea to allow for additional clerical costs that cannot be forecast exactly beforehand. Careful consideration should also be given to whether or not these savings will come as a result of converting to an automatic system or of improved procedures programmed into it.

This subject was discussed at

considerable length at the Borg-Warner purchasing agents' meeting this year. An expert, brought in to discuss machine installations, told of a highly successful system that saved a company thousands of dollars annually. He commented, however, that 80% of those savings could have been attained in the old system by improving procedures.

### **Feasibility Studies**

It is in this area where feasibility studies have tremendous value. The analysis of company procedures often disclose large savings that can be made by streamlining the present system without adopting machine methods.

Assuming the study has disclosed that a machine program is feasible for much of the company's clerical routine, then the means will be at hand for developing valuable by-products to assist the inventory controller. One of these—an invaluable tool for planning company operations—is a material explosion based on a production forecast for a given period. Material requirements indicated by the study are compared to the sum of the stock on hand and deliveries scheduled for the period to determine the adequacy of projected intake. After practice, this study can become highly accurate and will be of great value in controlling inventories.

The application of complicated formulas to determine reorder points usually involve excessive cost when attempted manually. As a result, simple "max and min" limits are set on the basis of common sense or rudimentary calculations. Programs of this type either provide too much or too little inventory, within a group of raw material items.

These formulas can be applied to such an inventory, however, on a mass production basis when programmed through electronic accounting machines. In addition,





**Between-session-buttonholing:** President-elect Paisley Boney (l.) and Fifth District VP Clinton Bishop exchange ideas.



**Inventory control for breakfast:** Addressing the after-breakfast inventory control workshop—Bob Sutton. E. W. Allen listens.



**Not surprisingly,** the most popular of the novel after-breakfast workshop sessions was one labeled, "Problems That Get Worse." Almost everyone seemed to have one.



**An innovation at the convention** was the Hendricks Club Wives' Dinner held at the same time their husbands were enjoying their usual hijinks. It proved a hit.

they can be regularly reviewed and corrected, thereby keeping abreast of changing conditions occurring in the inventory and improving company operations.

The need for studying the problem of quantity discounts is common to all purchasing or inventory control departments. Usually too much is handled on a "rule of thumb" basis at the expense of effectiveness of control.

These studies can be programmed in volume through electronic equipment. Results can be compared against yardsticks set up by management. This is a

job that is often not even attempted when left to the pencil pushers.

When purchase orders are prepared by magnetic tapes or pre-punched cards, the data is then available for producing follow-up lists automatically. Even the job of auditing customers invoices against original purchase orders can be accomplished automatically by comparing quantities, prices and terms on each. Only the unmatched data has to be printed to give the purchasing agent a basis for further investigation.

As by-products, most of these

studies can be obtained with little, if any, increase in cost. But their value in improving the effectiveness of the inventory control program is of major importance.

To keep up with the cost-price squeeze now occurring in American business, it is essential that we learn to control our inventories better at less cost. Modern tools are available in the form of electronic punched card or tape machines to accomplish both. Application of these machines to manual methods used in all size businesses can generally be justified on the basis of savings alone.



## The Emergency Requisition

ANYONE engaged in purchasing must at one time or another be faced with the emergency requisition. There are those who maintain that if the purchasing department were "on the ball" many, if not all, emergency requisitions would vanish, but I believe that most emergency requisitions emanate from causes outside the purchasing department.

However, no matter how astutely one plans an inventory with logical minimum and maximum quantities or no matter how much lead time we allow for those critical items that production requires, other factors will cause emergency requisitions.

The emergency requisition should be treated as a challenge and an opportunity to render a

service that may never be forgotten by your company or the author of that emergency requisition. It is an opportunity to test your vendors' service and a chance to give young buyers in your department a feeling for what it is like to operate in a "sellers' market," for that is your position in an emergency.

Many tools are available to help minimize the time required to carry out the procurement cycle. Let us examine some of these time-saving tools and how they are employed.

In an emergency, the direct telephone approach is by far the quickest way to ascertain who has the material, how much it costs and how soon it can be shipped. Multiple telephone calls

can be used to get the facts from various suppliers and to arm the buyer with sufficient information to make a decision. Awards made in this fashion can and should be followed up by written quotes from those solicited and purchase orders marked "confirming" should be sent to successful bidders.

To save transportation time air freight or air express is the only answer unless, of course, sizes and weights involved make this method completely impractical.

There are many time-saving tools available to the purchasing man. I have only highlighted the most obvious and the most often used. However, all of these usually spell "premium" and this is a cost that no company can absorb continually.

So, after that emergency is over, sit back and reflect; analyze the events and the outcome.

Who created the emergency? Is he an habitual alarmist? Could the emergency have been avoided? How did purchasing handle the situation? If you had to do over, how would you handle it? How could the emergency have been prevented?

—By Harold Bloom, *Materiel Manager, Avco Everett Research Laboratories, Div. of Avco Corp.*

## Cutting the Cost of Small Orders

MOST organizations realize that paper work costs money and that the amount of paper work required by any particular procedure must be geared to the value of the transaction.

For this reason, most organizations have some provision for cash purchases. However, the reduction of paper work is not the only justification for cash purchases. Immediate requirement and personal selection of small items is often a factor. Also, purchase of small specialized items from other than established sup-

pliers may be a factor.

In most organizations cash purchases are limited to a fixed amount. This amount, I'm sure, is in most cases picked out of the air, although there are some who will say it's geared to the cost of issuing a purchase order and the associated forms, such as requisitions and receiving reports. In my mind, the decision is one of good judgment rather than a figure arrived at by formula.

Although cash purchases will reduce the amount of paper work no purchasing executive would

leave his cash drawer open to all employees to purchase their small requirements as needed. Once a limit on cash purchases is decided upon, a procedure has to be set up to provide safeguards consistent with the values and the personnel involved.

Procedure will necessarily vary with the organization, but there are factors common to all:

- 1) Someone must be designated to handle and be accountable for the cash. This person must be at a location convenient to the personnel



needing small items. He should be a person familiar with the items to be purchased and mature and experienced enough to use judgment in deciding on method of selection and delivery, i.e.

- a) Have it delivered by the vendor
- b) Send for the item by a pick-up man
- c) Let the requesting person pick up

This man should be familiar with the established sources of supply and with trade discounts available to his organization. He should be familiar with the personnel of his regular suppliers so the order can be directed to an individual authorized to extend the customary trade discounts. Such a man will usually be a buyer or, in some cases, a storekeeper.

- 2) The next factor to decide is on what authority cash purchases can be made. This is usually at a lower level than required for other purchases.
- 3) The last point to determine is the paper work to be required. Usually these are limited to three forms:

- a) A receipt or voucher of some kind. This may be a sales slip, listing the item purchased, the amount paid, and from whom purchased and is signed by the individual receiving the material. In the absence of a sales slip, a petty cash voucher may be used.
- b) Petty cash order form. This form is used only when storeroom or operating personnel is sent to pick up material.
- c) A report form for the person handling the cash. This form will usually provide for listing the various items purchased with their costs and with vouchers.

—By Bryan Gouger, Manager of Purchases and Stores, City Public Service Board, San Antonio, Tex.

## The Blanket Order

**S**URVEYS made during the past few years have shown that the average purchasing activity writes 30% to 40% of its orders for amounts of \$25 or less and that about 60% of all orders are for values of \$100 or less. Generally speaking, these small dollar value orders, when written without benefit of some "small order system", cost about as much to write and administer as do those of higher value.

In addition, they can involve as much buyer effort as large orders.

A good small order system then, can reduce costs and release buyer activity for other programs such as value analysis or standardization work.

### Five Objectives

Any small order system should include at least these objectives:

- 1) Reduction of paper work;
- 2) Reduction of buyer load;
- 3) Lower inventory levels;
- 4) Faster service;
- 5) Reduced costs.

There is no patent method of achieving these objectives. Much will depend on present mode of operation. But here are some suggestions:

Reduction of paperwork and buyer activity can be accomplished through the use of blanket purchase arrangements with local firms from whom many small purchases are regularly made.

Blanket orders need not eliminate competition or price advantage usually obtained through shopping around. A review of previous purchases and traveling or repeat requisition will permit grouping day-to-day requirements into broad classes such as hardware, small tools, pipe and fittings, etc. Then, blanket purchase arrangements can be made with those local firms whom past experience has shown to be dependable and consistently low in price.

Agreements with several vendors should be made for each

class of goods so that orders can be placed with the one who offers the best price and delivery for each specific requirement.

Blanket purchase arrangements should be tailored to the class of goods being purchased. They may be general and broad in language with only sufficient detail to indicate the general nature of the supplies to be furnished. They may or not, as the need dictates, be specific as to quantity, quality and specifications.

The main thing to consider is the transfer of inventory responsibility from your organization to a supplier's organization. Other considerations include:

- 1) Vendor purchases—agreement as to what is being purchased and the methods employed.
- 2) Delivery receipt and a record of purchase—a system which provides evidence of the items bought, quantity, price, terms and other relevant data.

In setting up blanket arrangements you should keep procedures simple. Cost reduction resulting from the use of a small order system depends to a large extent upon the answer to the question, "Whom do you trust in your organization?"

The main cost reduction element will be the difference between the salary of the purchasing agent, buyer or buyers who now handle small orders and the person or persons to whom you delegate the responsibility under a new system. This can be a truck driver, messenger, stenographer, clerk, storekeeper, foreman, supervisor, or buyer.

In my company we have successfully handled small orders for cafeteria supplies by delegating the cafeteria manager the job of ordering as needed, using blanket orders negotiated by the buying staff. Similarly, a storekeeper re-orders cylinder gas, a garage foreman automotive parts, and a nurse medical supplies.

—By William A. Smith, Jr., Director of Procurement, National Lead Co. of Ohio.



# Small Company Traffic Control

By M. C. Staley, Purchasing Agent, A. M. Castle & Co.

**PURCHASING'S** biggest challenge in respect to traffic comes in those companies where there is no direct responsibility for traffic. Almost any purchasing department would welcome the opportunity to work with a traffic department staffed with experienced people but they rarely exist in smaller companies that cannot afford the extra overhead.

In such cases, traffic bureaus can help. Some of these bureaus work for a definite retaining fee; others publish various tariff tables, traffic regulations and instructions. Many bureaus will split 50-50 any successful over charge or damage claims that result from their audits. Surveys show that traffic bureau users save from 10 to 2.5 per cent in transportation costs.

There are three phases of traffic which I believe are most important to the purchasing agent and seem to create the most problems:

1. Premium transportation on freight.
2. Finding a proper freight rate.
3. Damage in transit.

**Premium transportation on freight:** Basic freight service has been so improved that premium transportation is unnecessary except in most unusual circumstances. In the last three years 72 hours have been chopped from schedules by regular freight forwarders and merchandise pool car shippers from the midwest and east to west coast points. For example, today Chicago freight is delivered on the third night for fourth morning spot in California, and on fourth night for fifth morning spot in the Pacific Northwest. Railway Express service and deferred air

service are scarcely better than that. From the New York, Philadelphia and Boston areas, with normal service in freight forwarder company cars, time in transit to California is fifth night for sixth morning spot and only one day longer in most instances to the Pacific Northwest.

## Faster Service

About a year ago a survey by the major department stores in the San Francisco bay area showed Railway Express shipments from the east coast area were in transit seven days on the average. Freight forwarding services at less than half the express rates and less than half the deferred air freight rates were giving almost as good service. This is particularly true over weekends.

The motor carriers have also improved their services. Fifth morning on the west coast by truck from the midwest area is standard, and about eighth morning from the atlantic coast area. On shorter haul transportation from the area west of Chicago to west coast points, motor carrier service is superior to that of freight forwarders or rail car users, in most instances. When you consider that Railway Express charges average two to three times charges by freight forwarder and motor carrier on the hauls from the area east of the Rocky Mountains to west coast points, it becomes a problem to justify the premium charge.

**Finding a proper freight rate.** A proper freight rate depends on a proper transportation description of the product. A surprising number of shipments carry trade names or other descriptions that do not accurately describe the shipment. For example, a freight

rate was cut nearly 50% by a major shipper by defining a steel cleaning article as a "cleaning compound" instead of as a "muriatic acid". The commodity was in truth a cleaning compound, was exclusively for that purpose, there were inhibitors and other products put into the muriatic acid which took it out of a muriatic acid category. By proper defining the commodity as a cleaning compound rather than as a muriatic acid, it got a lower freight rate classification.

The person who determines the freight rate should be familiar with the commodity and its uses. A commodity must take the same rate, irrespective of its end use; however, the use often helps put it into the proper freight category.

Remember on rates from, to and within the western part of the United States, most freight moves on "commodity" rates rather than general, or "class" rates, as in the territory east of the rocky mountains. This makes it essential to describe the commodity within the specific terms of these special, lower rates. Remind your eastern suppliers that the rate structure to and from the area west of the rocky mountains is almost completely different from the rate structure in the east. Many manufacturers and suppliers never understand that basic fact of life. For example, dry goods made of cotton take a rate about half those merely described as "dry goods, not otherwise specified".

Don't try to guess what the proper classification for your freight product should be. Get a rate expert to help. Give him all the facts, as much advertising literature as possible, so that he, too, can use his imagination in determining the proper "pigeon-





"Ask Me" buttons identify Rod Pedersen, Glen Day, and Fred Pettit as sources of information on Los Angeles activities and scenic attractions.

A large crowd was on hand for the opening of the Inform-A-Show.



While husbands toil, purchasing's ladies tour Hollywood, Beverly Hills, and Los Angeles. Perfect weather helps set gay mood.



Time out for the Buffalo boys: Walter J. Wolf, A. M. Judd, and J. Edward Kidd.



At N.A.P.A. headquarters, executive Secretary Howard Ahl (center) talks to Shipman Medalist Chester K. Ogden and Mrs. Ogden.



Dressed in authentic Spanish costumes, members of the Los Angeles Association and their wives turn out for an early Sunday morning welcome for the delegation from Houston, Texas.



hole" in which to place your rate.

**Damage in transit—what do you do next.** When a shipment is received damaged in transit, first personally inspect the damaged shipment to determine if the supplier is at fault because of insufficient packaging or a defective carton. Pressure to reduce the delivered price of a commodity, can reduce packaging below minimum requirements for safe transportation. Numerous national concerns have been criticized by west coast customers because they have reduced packaging to a limit adequate only for short haul transportation to midwestern and eastern customers.

#### Check the Routing

If the package appears adequate for the transportation job, check the routing. An axiom in transportation is the greater the num-

ber of interchanges of freight, the greater the damage. For example, if the shipment originated in Cleveland, Ohio, and moved by a freight forwarder that trucked it to Chicago, then reloaded the freight at Chicago into another box car, then took it possibly to a further break-bulk point and then trucked it to your destination, I would see if an alternative freight forwarder having the same rates did not run direct cars from Cleveland to your terminal city. It will surprise you to know how much damage can be cut down by proper selection of freight forwarders or truck lines. Many truck lines operate coordinated through schedules from key eastern points directly to key terminal areas in the eleven western states. I know of shippers of highly damageable chinaware and lamps and bakery

goods, such as cookies, that have made tremendous improvements in their damage record by proper selection of through rather than multiple interchange services.

#### Filing Claims

If you survey the packaging and get that right, then survey the route and get that right, and there is still damage, you must file the claim. Your claim must be filed within nine months of the time the shipment is delivered to you or it is null and void. A mere letter to a carrier expressing an intention to file a claim is not a claim within the meaning of the law. If you don't have your facts ready, for goodness sakes file a claim in a fixed amount and indicate it may be more or less when supporting papers are furnished, but be sure and get a specific claim filed.

## What the P.A. Must Know About Traffic

By Frank Wean,  
Purchasing Agent,  
International Paper Co.

**F. O.B. POINT.** It is extremely important for the Purchasing Agent to not only know whether the freight is prepaid or collect, but also such things as:

What type of loading facilities does my supplier have? Is he on a rail siding, or more conveniently located near a truck line?

How many times does my consignment change hands and how much time is lost in so doing?

In cases of small, infrequent shipments, it is often better to have the shipper select the carrier. On more frequent shipments know the services each of the carriers can offer, particularly transit time and congestion at point of destination.

#### Claims:

Claims fall into several different categories, and may be di-

vided into:

- (1) **Known Loss**—A known loss refers to any freight which the carrier fails to deliver to the consignee. This is the simplest of claims. At the time of delivery, the consignee should request the carrier's agent to acknowledge the shortage by endorsement on the original freight bill. This will expedite settlement of any claim filed.
- (2) **Concealed Loss**—A concealed loss means a loss that is not apparent at the time of delivery by the carrier, but is discovered by the consignee upon later opening of the containers and checking the contents.
- (3) **Known Damage** — Known damage is defined as damage

that is apparent and acknowledged by the carrier at the time of delivery to the consignee. It should be noted on carrier's receipt and copy before receiving signature is applied. It is necessary for the carrier's agent to acknowledge by signature the damage notation in order for it to have any legal status.

- (4) **Concealed Damage** — The goods are received in apparent good order and a clear delivery receipt is given the carrier, but upon later opening of the packages breakage or damage is found. Carrier inspection is of extreme importance in facilitating the settlement of the concealed damage type of claim. (Please turn to page 282)





**Doc Mal-de-Mer** (George A. Cumming, Deputy Purchasing Agent, State of California) scores a point in value analysis. The VASCO show, complete with Indians, music, and a bag of tricks, was a convention hit.



**David Bopp**, District Manager, James Flett Organization, addresses the well-attended "Salvage and Surplus Materials" workshop.



Panelists listen as **C. G. Thomas**, purchasing manager, Dresser Manufacturing Division, answers a question on quality control.



The Republic Supply Co. suite proves a favorite spot for after-hours relaxation.



At the annual banquet, some of the table talk was on the serious side.



# Forecasting for Materials Management

By Dr. R. B. Orenstein, Industry Marketing Representative, International Business Machines Corp.

**A**N INVENTORY CONTROL system cannot function without forecasts in one form or another. But too often we look at forecasting as either of two extremes—pure guesswork or intuition at one extreme, complex statistical calculations at the other. This is unfortunate because the forecasts needed for inventory control can be met by methods that walk the middle road. One such method, the moving-average, is used quite extensively. Another method called "exponential smoothing" is growing in popularity, especially among those businesses which are doing, or plan to do, their inventory control on data-processing equipment. Forecasts can be used in an inventory control system and exponential smoothing is a valuable aid in making these forecasts.

## How Much to Order

Many companies calculate economical order quantities by using one of the many formulas available for this purpose. The formula comes up with an order size that balances the annual costs of ordering against the inventory carrying charges so that annual requirements can be obtained in the most economical way. Considerable savings are possible by going to such a formula—certainly much guesswork is eliminated. But to use the formula one needs a forecast of demand—the annual requirements—and this is clearly a major use for a forecast.

Although the economies available with formula calculations of order size have probably not yet been exhausted by business, there is a growing interest in still another element of the inventory control system—the order point.

(See the March 28, 1960 issue of **PURCHASING** "How We Cut Inventories 25%", by J. G. McLellan).

The order point, and its "safety stock" component can account for a major share of the inventory. Safety stock is a protection against uncertainties in demand and delivery. Without a clear cut measure of these uncertainties there is a great tendency to maintain high levels of inventory to provide 100 percent service under any circumstance.

It is a paradox that many companies which aim for no out-of-stocks and back orders still give less than 100% service. High safety stock, with its attendant costs, cannot guarantee high levels of service if it is not apportioned to the items needing the most protection from uncertainties.

## Demand Is Forecast

The order point is a forecast of demand. It is the demand you are likely to incur during the lead time, the time between placing the order and receiving replenishment. But it would be foolhardy to base the order point on a forecast of the average rate of demand, say 75 units per week, and the average lead time, say four weeks, for a resultant order point of 300 units.

Averages being what they are, 50% of the time an order point set this way would be too small and out-of-stocks would result. So one adds a safety factor to take care of a higher than average demand, or lead time, or both. It's hit or miss to do it this way. What is needed is a forecast of the maximum reasonable demand likely during the lead time. This

is, by definition, the order point.

When the order point is set accurately, economies are possible by removing "dead stock" (unnecessary safety stock) and improving service by telling you how much stock to add to give just the desired level of service you want, and no more.

## Forecasts Are Basic

So we see that forecasts are basic to an inventory control system. It is important to note two characteristics of the forecasts required. First, we are not looking very far ahead. For the order point calculation we only have to look as far ahead as the lead time, and for the economical order quantity calculation we can forecast a current rate of demand and, with data-processing equipment, recalculate the order quantity each time we need one so that the order quantity is based on a forecast which is right up to the minute. As a matter of fact we can even re-forecast a new order point once an established one is reached and an order size calculation has been triggered. It is quite common to do this when such calculations are made by an electronic computer. Thus, for both the order point and order size calculations we can make many short-range forecasts.

A second characteristic of a forecast for inventory purposes is that it need not be exactly right every time. In fact, we recognize that it can't be. What we do require, however, is knowledge of the likely error in the forecast. If we knew, for example, that it is likely that the actual demand will be above the forecast by an average of 50 units, 95% of the time, we have a useful piece of



information. To add 50 units to each forecast would provide an order point that assures 95% service. In other words it is just as important to estimate the expected inaccuracy of the forecast as to make the forecast itself.

Taking into account the two characteristics of the forecast mentioned above, we can rule out human judgement as a dependable, economical forecasting scheme for scientific inventory control. No matter how good the forecast on the average, not much of anything can be stated with assurance on the likely error each time the forecast is made; and in any event, this would be an expensive way to come by the many thousands of routine inventory control forecasts. The need for frequent lead-time forecasts prohibits the use of elaborate statistical calculations—they just take too long to make when there are many thousands of inventory items. This, of course, doesn't prohibit their use for longer term forecasting.

### The Moving-Average

The moving-average is something we use quite often, maybe without even knowing what it is called. One inventory control system estimates the demand for an item next week by taking an average of the latest three weeks' demand. This is a three-week moving-average. The demand four weeks ago is dropped out of the calculation and the current weeks' demand is added into it.

Note two aspects of the moving-average. To begin with, each week's demand is weighted equally in the final average—one-third in the case of a three-week moving-average. And secondly, the weight given the current week's demand depends on how long we decide to make the moving-average. A three-week moving average weights the current week one third, all the rest two-thirds. A six-week moving-average weights the current week only one-sixth, all the rest five-sixths. In other words, the longer the moving-average, the less influence the current week's demand has on the average.

Then there is the factor of lag to be recognized. Because of the

emphasis placed on past demand, a basic upward or downward trend in demand or a seasonal change is lagged by the forecast. A long moving-average smoothes the random fluctuations in demand very well but reduces the response of the forecast to trend and seasonal changes. To adjust a moving-average to compensate for this weakness is not simple.

We have yet to point out an obvious short-coming of the moving-average when electronic data-processing equipment is being used in the inventory control system. A moving-average requires the retention of demand history, as long a history as the length of the moving-average. However, it would be desirable to free the disks or magnetic tape from the task of storing thousands of demand histories.

For all its problems the moving-average is still the most often-used forecasting technique in inventory control systems. But with the growing use of electronic data-processing equipment, a new technique developed by Robert G. Brown of Arthur D. Little, Inc., promises to supplant its predecessor (see the book by R. G. Brown, *Statistical Forecasting for Inventory Control*, McGraw-Hill Book Co., New York, 1959). This advanced, yet simple, method of forecasting is called "Exponential Smoothing."

### Exponential Smoothing

Exponential smoothing has been quite successfully employed to calculate the moving-average without having to retain long files of historical usage data. As mentioned, this would be a distinct advantage in a data-processing application. However, there are many advantages to this method which are available to those who have not yet gone to mechanized inventory control.

In exponential smoothing one has a very simple and automatic procedure for detecting and adjusting the forecast to take basic trends into account. The moving-average, quite useful in smoothing random fluctuations in demand, will ordinarily forecast the correct level of demand too late

when there are basic trends present. It lags in response due to the weight placed on past experience. Although exponential smoothing also weights past experience, its effect is to place decreasing weight on the items of demand history as they increase in age.

The moving-average places equal weights on the past items of demand history. And exponential smoothing readily allows for the trend adjustments as part of the data-processing procedure. The correction for lag is built right into the method.

### Method Is Flexible

Flexibility is another benefit of exponential smoothing. Ordinarily a specific length moving-average, say six weeks, is used for every item in the inventory. But it may not be the best forecaster for each item. One item may be better suited to a short moving-average in order to respond more to current demand; for another item a longer moving-average provides more accuracy.

Exponential smoothing allows, if one desires, as many different length moving-averages as there are items. Furthermore, the length of moving-average can easily be adjusted upwards or downwards whenever necessary. No procedure or computer programming changes are required to make these adjustments because of the inherent flexibility of the technique.

The method of exponential smoothing is quite simple in its application. One merely updates a previous forecast (average) by a fraction, called "A", of the difference between that average and the actual demand for this period. Expressed in equation form the rule is:

$$\text{New Average} = \text{Old Average} + A (\text{Current demand} - \text{Old average})$$
  
In another form it becomes:

$$\text{New Average} = A (\text{Current demand}) + (1-A) \text{Old average}$$
  
For example, last week we forecasted 177 units for the average demand this week. Actual demand this week turned out to be 197 units. We would forecast next week's demand as follows, choosing  $A = .1$ ,

(Please turn to page 270)



## What Makes a Good Supplier?

**WE ALL AGREE** that good suppliers are important, make our jobs run smoother, and free us from unnecessary expediting, tracing, and negotiating. But we may not all be in agreement as to what constitutes a good supplier.

What results are we seeking from good suppliers?

(1) The material we buy will be of proper quality for the use intended.

(2) We will be able to buy the proper quantity of material.

(3) Based on quantity and quality, we will be charged a fair and reasonable price.

(4) Delivery will be made at the scheduled time and place.

(5) We will have a constant source of information concerning substitute materials, etc.

Most good suppliers have certain characteristics. They include:

(1) Keeping up with new developments.

(2) Having competent management that is honest and fair with its customers and employees.

(3) Believing sincerely that its main goal is to give honest, dependable service to its customers.

(4) Having adequate productive capacity and the technical know-how necessary to do a good job.

(5) Having a satisfactory labor relations history.

(6) Using sound progressive procurement techniques in buying the material that it needs to manufacture the products we buy.

(7) Being located reasonably close to our company or plant.

Can we make a good supplier out of a bad one?

It is doubtful whether a bad supplier can be made into a good one if it doesn't have the basic

qualifications. However, as purchasing agents, we can certainly help a qualified supplier become a good and satisfactory source of supply for our companies.

There are several principles we should follow:

(1) We must be reasonable in our demands on a supplier, but we should never forget that our primary responsibility is to our company.

(2) We should consider proper quality, price, and service as the basic qualifications that must be met before an order is placed.

(3) We must know what we are talking about and have technical information so we can help the supplier specify the proper material.

(4) If we expect honest and fair treatment from a supplier we should certainly be honest, fair, and courteous in our dealings with its representative.

(5) We, too, must have knowledge of substitute materials, prices, trends, etc.

(6) We must understand and appreciate the inter-relationships that exist between the specialized functions of purchasing, sales, engineering, and production.

(7) We must sincerely believe in our jobs, be loyal to our companies, and treat fairly those with whom we deal.

Once a satisfactory relationship has been established with a good supplier, how do we handle the alternative source? Can we be loyal to our primary source—the good supplier—and still have other sources of supply?

Loyalty to a good supplier does not mean that competition no longer exists or that the search for better value has stopped. As good purchasers, we will give our

established supplier every opportunity to continue to meet our needs. This gives the good supplier a legitimate competitive advantage, but he still must compete.

Goodwill and confidence between the purchaser and vendor are developed through personal contact with each other in day-to-day relationships. Service is improved as a supplier becomes more familiar with the needs, operations, methods, and practices of the purchaser.

We purchasing agents have a personal interest in maintaining a loyal and consistent relationship with established good suppliers. However, there is no reason why we can't or shouldn't buy from other sources. A good supplier should know that, if we do our jobs, we will generally have more than one vendor.

Personal friendships develop as we deal with our suppliers. This is a natural and desirable development.

But we certainly agree that subjective feelings are not the proper basis for making purchasing decisions. As purchasing agents, we cannot afford to place ourselves under any obligation that will affect our judgement and freedom.

Vendor performance is evaluated by using basic criteria that are familiar to all of us—dependability, service, quality, and price. Once a good supplier has become established with us, we then have the responsibility of working to help him become an even more qualified source of supply.

—By J. Merrill Bushnell, Purchasing Agent, Pacific States Cast Iron Pipe Company.





At the opening general convention session, American Motors' President George Romney scored both political parties for concerning themselves with "trivia" and not discussing basic issues.



Just one of the many reasons the Early Birds' dinner turned out to be such a smash.



Andy Kennedy (center) proudly introduces members of the Westinghouse Corporation and their wives.



At the stimulating steel forum some of the audience stayed after the program to ask more questions.

Councilwoman Rosalind Wyman presents Los Angeles City Council's resolution declaring May 22-28 as "Purchasing Agents Week" to three of the convention organizers (l. to r.): Bill Broker, E. Benton Long and Vic Quam.





## Handling Salvage and Surplus Materials

**T**HE WORD "junk" is defined by Webster as a collective noun for old metal, paper, glass, and other refuse. It is also described as useless stuff, trash, rubbish. If we accept these definitions at face value, we are obviously wasting our time here this morning.

It is my contention that, as members of the purchasing profession, we should approach this topic today with the attitude that there are few items that do not have some marketable value. It is our job to get the most money for all surplus, salvage, and scrap that we handle.

Although the disposal of surplus and scrap is quite unrelated to the procurement function, it is not illogical that the purchasing officer, with his knowledge of materials and how his company uses them, should be given this assignment. He is familiar with the companies which make various materials and where they are located. He knows how the items his company buys are made and what they cost.

### **F. A. Most Familiar**

This is the proper background for deciding what items should be reclaimed or disposed of as scrap and then finding the most favorable outlets. Since the purchasing agent is familiar with various buying techniques, he can weigh the merits of having certain scrap or metals converted into a usable product for his company or of selling the materials outright. He is in the best spot to determine how to convert scrap and surplus into dollars.

As a source of profits, the sale of scrap and waste materials can be of major importance to your company. Such transactions run into several billion dollars an-

nually. The majority of this volume is, of course, transacted in the buying and selling of ferrous scrap and non-ferrous metals. Markets for these commodities are well established and prices are determined through the interplay of supply and demand. The majority of this scrap finds its way back to the primary metals producers.

The sale of waste materials—including paper, rags, rubber, and wood—is generally practiced by industries generating any volume of this type of material. The monetary return from sales of scrap and waste is greatly influenced by the degree of segregation or sorting by type alloy, grade, size and weight.

### **Who Does The Sorting**

The reasons for sorting are obvious. If scrap metals or waste are mixed, somebody must sort it if it is to be of any use to the consumer. The seller must decide if his personnel are to be responsible for the sorting or if it is less costly to hire a dealer to do the work. If the accumulation is large, it usually pays for the producer to segregate the materials as they are collected from the production lines.

There are, however, many products that have no such ready markets. Their disposal can present a challenging but often perplexing problem for the purchasing officer. Items such as spent acids, contaminated liquids, metallic drosses, residues, and similar products may require considerable monetary outlay for their disposal. It becomes a gratifying experience to change such an item of expense into a source of revenue.

For example, a company had,

for many years, been skimming the dross-like ashes from its lead tempering pots and paying a scavenger to haul it away with other refuse. The purchasing agent, upon investigation, found that these so-called worthless ashes contained a high percentage of lead. These drosses are now accumulated and sold to a lead refiner, yielding several thousand dollars annually.

### **Recovering Profits**

The E. I. Du Pont Company has for many years realized considerable revenue from its salvage and reclamation program. At one time, nitrate of soda burlap bags were discarded as worthless junk. After a bag-washing machine was installed, considerable quantities of nitrate of soda were recovered and the laundered and sorted bags were sold—yielding over \$2 million profits.

The disposition of surplus or scrapped equipment like machine tools also presents certain problems to the purchasing manager. In some instances, the equipment may be in good operating condition and may command high prices when sold directly to another user. On the other hand, it may be in such condition as to be hazardous for further use and should be sold as scrap iron. The purchasing agent's choice of outlet—user, dealer, or junkman—to a large extent determines the amount of revenue gained.

The purchasing agent as the head of a profit making function cannot afford to overlook the potential revenue that can be realized from a well-managed scrap and surplus disposal program.

—By Bertil G. Erikson, Purchasing Agent, Signode Steel Strapping Company.





At a pre-convention TV-covered press conference, American Motors head George Romney gave his purchasing department much of the credit for his company's improved financial position.



Swapping reminiscences at the cocktail party before the Hendricks Dinner were (l. to r.): Tom Jolly, Clair Pingree and Walter Bell. As always, the Hendricks get-together was fun-filled.



Distributors—Buyers' Group meets for lunch. Carl Davis, Globe Machinery & Supply, presided.



Loot grabbers. One of the most popular amusements was collecting souvenirs from the Inform-A-Show.



Welcomed to the Inform-A-Show by Wes Richards (l.): Mr. and Mrs. Roy Arnn.



There was a lot of shop talk at the Public Utility Buyers' luncheon. Presiding over the group was George L. Wilson.



## Reporting to Management

By **Frederick J. MacDougall,**

Asst. to Director of Purchases,  
Allis Chalmers Manufacturing Co.

**T**HE SUBJECT I'd like to discuss is "Weekly vs. Annual—Special vs. Regular Reports." The first part implies the need for scheduling reports categorically, perhaps even to the extent of reporting just for the sake of issuing a report. Reports scheduled promiscuously can be habit forming and meaningless.

Recently, I observed the latest high speed printer in operation. This machine is designed to turn out reports from a computer at the rate of 600 lines per minute or 288,000 lines per day.

Now, you know as well as I do that management just can't read reports that fast. I believe that the report management likes best is the one telling how to eliminate nine out of ten reports.

### **A Vital Link**

Up to this point, I may have given you the impression that I have joined an anti-report group advocating the overthrow of all reports. On the contrary, I submit that reports are a vital communication link in our industrial scene; but to be an effective communication link, they must be kept dignified. Their dignity can be maintained by making reports meaningful and objective.

Reports will be meaningful if they are timely. They will be objective if they satisfy management's requirements.

There is no rule of thumb you can apply to the frequency of reports. The requirements of one organization may vary greatly from another, since the needs may differ greatly. But generally speaking, requirements break-down into two phases:

(1) The reports that management wants.

### **(2) The reports that management needs.**

The success of your reporting to management will be tied directly to your ability to give them the reports they want—whether they need them or not, when they want them—and to give them the reports they need—whether they want them or not, when they need them.

Management's interest in reports from purchasing is obvious. We are custodians of the greatest category of costs in most industrial enterprises. Naturally management wants to know how effectively we are applying ourselves and how we are doing in the market place. There is no question about it. Management wants to know—but there is a question as to the frequency with which we are to report.

### **Close Control Necessary**

I personally feel that reporting on a weekly basis, except under some special conditions, will serve no sound purpose and eventually will become meaningless. The exception would be where close control is necessary, such as supply or price of a particularly important commodity.

Weekly reporting in such areas as operating statistics, if requested by top management, could imply lack of confidence in the department head. Weekly reports tend to become routine and habit forming.

Annual reports, on the other hand, might be too infrequent and tend to review the past with statistical information. This makes for a good conversation piece, but is too often of questionable value.

Regular reports imply habit forming tendencies and should

frequently be given critical review. If they are required to assist management in decision-making, they can be justified under some special circumstances. But any report classified as a "regular" would indicate a routine, while the original purpose is often lost in the shuffle.

I have seen "regular annual" reports which were still being issued three years after they were no longer required. Any report classified as a regular should be given critical review frequently.

Of the four categories of reports considered here, special reports are perhaps the least vulnerable to criticism and can be the most effective. Instead of making a routine matter out of reporting and cluttering up top management's desk we are here applying the concept of management by exception. Reports issued when required are the most effective ones.

I am not implying that reporting should be confined to special reports. But I do believe that by eliminating the routine repetitive reports and concentrating on those that are required to attain corporate objectives, our reporting will be more effective.

We should get the feel of management's reaction to our reports, in order to constantly try to improve our techniques and give management better tools with which to work.

Our company has established procedures for reporting ordinary purchasing activity to management. The three types of written reports used are:

- (1) Activity
  - (2) Purchasing Savings
  - (3) Purchase Commitment and
- (Please turn to page 242)





Almost every post-breakfast workshop room was filled to capacity despite the unusually early starting time.



Moderator W. L. Betz asks for questions from the floor during a workshop session on leasing v. purchasing.



Mr. and Mrs. George Transou at the Early Birds dinner.



Harold Berry found time between his many official duties to take in the Inform-A-Show. Here Mrs. Berry joins him at the Aero Mayflower booth.



Ole! Fiesta! Brava! . . . and all that! Even Texans didn't want to go home again after meeting this California queen.



There was lots of activity at the Link-Belt booth throughout the Inform-A-Show.



# How to Improve Your Purchasing Manual

By E. F. Andrews and C. Warner McVicar

**T**HE FIRST PART of our purchasing manual is a printed and bound section entitled "Statement of Purchasing Policies and Principles". The second section is in loose leaf form and consists of an organization chart and commodity category listings by buyer. The third section—still in the state of preparation—is the procedure section which spells out the specific steps and procedures of purchasing: requisitioning, clearing invoices, preparing purchase orders, contracts, etc. Once our manual was prepared, approved by top management and signed by the president of the corporation, it was distributed to all personnel who could initiate purchase action. It was distributed by the purchasing division. As a follow-up, several class sessions or discussions were held with various key operating personnel to discuss the manual and answer questions.

Most important are the policies and principles. This section which sets forth our policies, ethics, principles, rules of conduct, and objectives is a very strong internal relations tool.

It includes these subjects:

- 1) Statement of authority. Purchasing's responsibility as a division, signed by the president of Allegheny Ludlum Steel Corporation.
- 2) The corporation's objectives.
- 3) The purchasing division's specific objectives.
- 4) The N.A.P.A. code of ethics.
- 5) Purchasing organization. This section explains how we are organized and who is responsible for policy decisions.
- 6) General policy. This section sets forth general purchasing policy and our relationship

with other departments. It also states rules of conduct for seeing salesmen, vendor relations, and our responsibility for public relations.

- 7) Special policies. This section states in detail the basis on which we select vendors; price policy, pointing out our interest in cost instead of price; our policy on gifts and gratuities; reciprocity; trial orders and samples; employee purchases; standardization and disposal of obsolete equipment and materials.

The manual has served as an excellent guide for top management. Division heads know what to expect from purchasing. Policies have been effective and the cooperation from management outstanding. So long as we operate within the policies set forth here, purchasing has practically a free hand to make decisions.

Since the initial distribution of this section of the manual, the largest request for additional copies has come from our sales department. Almost every salesman of our corporation carries a copy. We did not send them any in the beginning, but after seeing the section they requested copies. We have many letters from our sales force telling us of discussing purchasing with customers. In many cases a salesman left his copy of the manual with the customer. In this way, we believe purchasing is fulfilling its full need to serve the total corporation objectives by being of ethical assistance and interest to our customers and people in general.

—By E. F. Andrews, Director of Purchases, Allegheny Ludlum Steel Corporation.

**PURCHASING MANUALS** have become a necessity among purchasing executives. In *PURCHASING Magazine*, Stuart Heinritz asks purchasing agents:

1. "Do you have a written statement of purchasing policy?"
2. "Is it a good policy?"
3. "Do you follow that policy in your buying?"

In Rockwell we do have a written statement of purchasing policy, it is a good policy, and we follow it in our buying.

I have another quotation from Stuart Heinritz. Before the New England Purchasing Agents Conference, he stated:

"Management does not carry a torch for purchasing. Purchasing, therefore, must make its own imprint on management."

## Make Imprint on Management

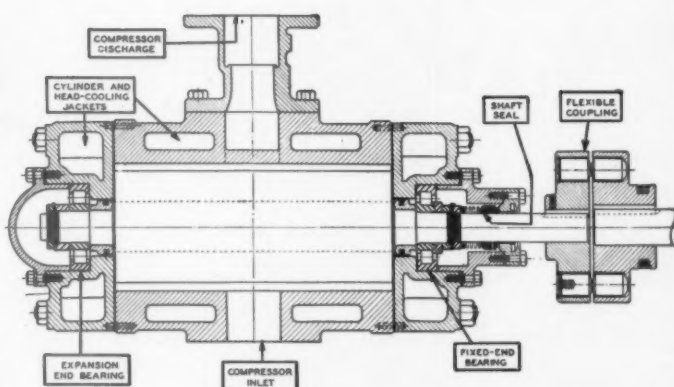
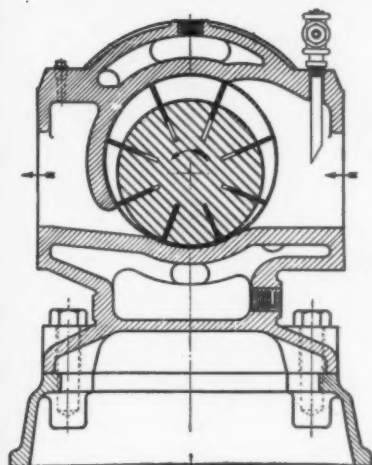
How can you make your imprint on management? One way is to do it with the help of a purchasing manual. But it may be of little value to prepare a purchasing manual and distribute it only to others in your department. Maximum value is obtained when you make a planned approach to the problem.

To begin, you need to look at a number of other purchasing manuals and use from them what would be applicable to your company. You should prepare what you think would be an ideal manual that will spell out policies and procedures.

Next, consult with other members of management regarding each section of the manual that has anything to do with them. Ask for suggestions, comments,

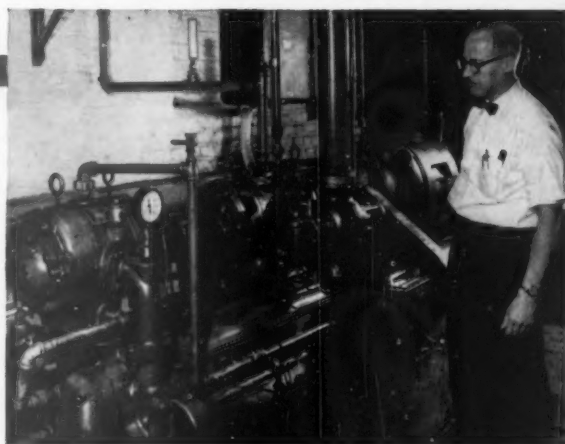
(Please turn to page 236)





Hard service never affected this Fuller rotary's original output—230 cfm. of air at 90 lb. G., reports Mr. Schott, chief engineer, Thomas C. Wilson, Inc., Long Island City, N.Y.

## FULLER ROTARY COMPRESSOR RUNS 13 YEARS WITHOUT DOWNTIME



A Fuller rotary at Thomas C. Wilson, Inc. got its first maintenance shutdown recently, for renewal of roller bearings and rotor vanes—after running without downtime since 1945.

**4 years of 24-hour service.** The Wilson plant makes tube cleaning equipment, tube expanders and portable pneumatic tools, and so makes heavy daily demands on shop air. For the first four years, three-shift operation kept the Fuller rotary running round the clock. Since 1949, it's been working eight-hour shifts.

**Simple design means trouble-free service.** Besides

bearings, the only moving parts in a Fuller vane-type rotary compressor are the cylindrical rotor and the blades. These compensate for wear automatically. Cylinder head slips off, permitting blade and bearing inspection in a matter of minutes.

**Compact and vibration-free.** Direct-drive system saves space. Simple, rugged design gives constant service without extensive supervision. Thus, Fuller rotaries can be installed out-of-the-way—on upper floor, on balconies, in basement corners, using low-cost, light-weight foundations.

1189  
C-340

Write today for detailed information on the full line of Fuller rotary compressors for in-plant services, gas gathering, and industrial refrigeration.



**FULLER COMPANY**  
170 Bridge St., Catasauqua, Pa.  
Subsidiary of General American Transportation Corporation  
Offices in Principal Cities Throughout the World

**Fuller**

...pioneers in harnessing AIR

PIONEERS OF HIGH-EFFICIENCY VANE TYPE ROTARY COMPRESSORS SINCE 1930

For More Information Write No. 203 on Place Mark Card—Page 32

JUNE 20, 1960

For More Information about ad on following page  
Write No. 204 on Place Mark Card—pg. 32→

109



## Speedy, safe Yale electrics

make loading, dock handling and warehousing quicker, easier, less expensive for you. Special features of these end-control electrics include high lifting speed, a turning radius so short that the truck can turn within an inch of its own length and a low step for easy on-and-off operation. A choice of controls is available, specially designed to suit a wide variety of operations. Choose the one that suits your applications best—they all protect fragile loads. Interlocking I-beam mast construction prevents edge-to-edge wear and strain. Economy of operation is assured because of efficiency of handling and long life of the equipment. Capacities: 2000 and 3000 lbs. Yale's new end-control electric is just one truck in the most complete line of industrial lift trucks and hoists manufactured today. For more information contact your Yale representative or write to The Yale & Towne Manufacturing Company, Materials Handling Division, Philadelphia 15, Pa., Dept. KT8.

Yale Materials Handling Division, a division of The Yale & Towne Manufacturing Company. Manufacturing Plants: Philadelphia, Pa., Forrest City, Ark. Products: Gasoline, Electric, Diesel and LP-Gas Industrial Lift Trucks • Work-savers • Warehouse • Hand Trucks • Industrial Tractor Shovels • Hand, Air and Electric Hoists.

# YALE®

INDUSTRIAL LIFT TRUCKS  
TRACTOR SHOVELS • HOISTS

YALE & TOWNE









# Rayon Cord Strapping Offers Many Advantages

**A** NEW IDEA in industrial packaging comes from the American Viscose Company. It is Avistrap—a tough rayon cord strapping that is safe, economical, and easily handled.

Avistrap will do many jobs where steel strapping is now used, and it will do them better, says Avisco. It has sufficient strength for many industrial applications and is highly flexible, so that it will fit tightly around cartons without cutting. When properly tensioned, it cannot harm merchandise.

Cord strapping weighs from  $\frac{1}{4}$  to  $\frac{1}{7}$  as much as steel strapping of the same strength and costs less per foot. It comes with its own tensioning and sealing tools, complete with disposable spool, in a yardage that is equal to a 100 lb

coil of steel strapping.

Not only does this light weight and small size simplify handling, but it also reduces shipping costs and cuts down on storage space. A 1000-yd spool of heavy-duty Avistrap measures  $13\frac{1}{2}$  in. in diameter and is 6 in. wide.

### No Sharp Edges

Because it has no sharp edges and is never under tension on the spool, cord strapping is extremely safe to use. There is no danger of cut hands and it will not lash out with jagged ends should it break from over-tensioning. Neither does it offer any disposal hazards. Both the strapping and spool are readily burned.

For advertising or identification purposes, the white strapping can be imprinted in various colors with company, or product names.



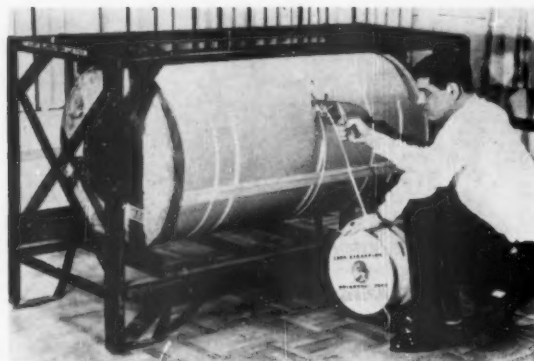
Made of strong rayon cord, Avistrap can replace steel strapping in many applications. Applied with its own tensioning and sealing tools, it will not harm cartons.



Cord strapping is strong enough to be used for palletizing large cartons. Because it is soft and flexible, it is extremely safe to use.



A 1000-yd. spool of strapping is easily handled with this portable dispenser. Tray holds tools and a supply of seals.



Versatility of cord strapping is shown by its application in packing rolled material. The tensioner, with cutter and unlimited take-up, requires little effort to use. Spool may be used with stationary dispenser shown here or with hanging dispenser.





better way  
to a  
good steer

Feed packaging has taken a turn for the better with WONDERWALL, West Virginia's multiwall bag that *reduces both breakage and costs.*

Ordinary bags are made with several kraft plies to achieve a given strength. WONDERWALL's advantage: the same performance with fewer or lighter plies.

The extra strength in WONDERWALL comes from Kraftsman Clupak\* paper—brought to commercial perfection by West Virginia. Its unique, built-in "stretch" absorbs more impact without breaking.

WONDERWALLS are another example of how West Virginia is serving customers with exceptional quality and economy. Through research expenditures of over \$3,000,000 annually and virtually total utilization of raw materials, West Virginia produces outstanding quality with unusual efficiency.

For a better, less costly multiwall, get the facts on WONDERWALL. Write Multiwall Bag Division, West Virginia Pulp and Paper Company, 230 Park Avenue, New York 17, New York.

\*Clupak, Inc.'s trademark for extensible paper, manufactured under its authority and satisfying its specifications.



**West Virginia  
Pulp and Paper**

For More Information Write No. 205 on Place Mark Card—Page 32





## ANDY DANEFF PUT THE RAINBOW IN A CAN

There are wealthy men today who can credit their first million to men like Andy Daneff. Andy is an Alcoa Specialty Salesman who helped manufacturers formulate a paint for an overlooked source of profit—the fifth side of a building.

By drawing on Alcoa's vast fund of aluminum knowledge, Andy's customers were able to mix color and tiny aluminum flakes to dot the landscape

with sparkling rooftops that defy the weather and please the eye.

Andy is one of some 500 Alcoa Specialty Salesmen who scored kindred accomplishments in hundreds of different industries. They helped put buy-appealing foil packages on the grocer's shelf; high-purity alumina ceramic nose cones on today's guided missiles; aluminum electrical transmission lines across the land.

Whatever you make in aluminum, Alcoa trains specialists like Andy Daneff to help you produce it, package it, promote it and sell it. This is still another way we put more than 16 ounces of metal into every pound of Alcoa® Aluminum you buy—an added value that's all yours when you call on your local Alcoa sales office. Aluminum Company of America, 2017-F Alcoa Building, Pittsburgh 19, Pa.



**ALCOA ALUMINUM**

*helps you design it, make it, sell it*





## Alcoa has hundreds of Andy Daneffs to help you design it, make it, sell it

All of Alcoa's skills are mobilized to a single purpose: To put more than just 16 ounces of metal in every pound of Alcoa Aluminum you buy. Here are 12 of the dozens of ways to do it:

1. **Research Leadership**, bringing you the very latest in aluminum alloys and applications.
2. **Product Development** by specialists in your industry and your markets.
3. **Process Development Labs** for aid in finishing, joining and fabricating.
4. **Service Inspectors** to help solve production problems at your plant.
5. **Quality Control** to meet top standards or match your special needs.
6. **Complete Line** including all commercial forms, alloys, gages, tempers.
7. **Availability** via the nation's best stocked aluminum distributors.
8. **Foremost Library** of films and books to help you do more with aluminum.
9. **Trained Salesmen** with a wealth of on-the-spot information.
10. **Sales Administrators** constantly on call to service your orders.
11. **Year-Round Promotions** expanding your old markets, building new ones.
12. **The Alcoa Label**, leading symbol of quality aluminum, to mark your goods.

## Added Values With Alcoa Aluminum



... is a case book of Alcoa special services and a guide to their availability in design, manufacture and sales. Your copy, with some of the most rewarding information you may ever read, is waiting and it's FREE. Write: Aluminum Company of America, 2017-F Alcoa Building, Pittsburgh 19, Pa.

For More Information Write No. 206 on Place Mark Card—Page 32

JUNE 20, 1960

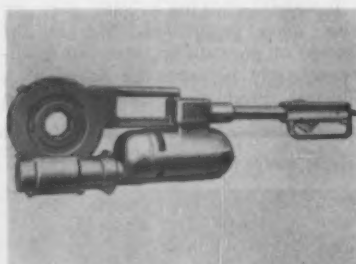
## Products

### Anti-Freeze Safe Year after Year

An antifreeze that can be used safely year after year never needs to be drained from a properly operating cooling system. Chemical inhibitor rustproofs entire cooling system and protects all metal surfaces, including latest aluminum alloys, against corrosion. In addition to providing anti-freeze protection, product maintains efficient cooling summer and winter and can be mixed with ordinary water. A patented safety feature changes solution's color if leaky water pump, hose connection or cylinder-head gasket lets too much air or corrosive gases contaminate coolant. Thus anti-freeze warns of major cooling system breakdowns before costly damage takes place. **The Du Pont Co., Wilmington 98, Del.**

Write No. 18 on Place Mark Card—Page 32

### Versatile Portable Power Pipe Threader



A portable power pipe threader which weighs only 20 lbs. threads ¼ to 4 in. pipe on the job or in the shop. Unit is powered by ¾ HP motor which drives at 530 rpm at stem, reduced to 26 rpm tool output. Pipe from ¼ to 1 in. is threaded in 20 seconds with direct drive. Pipe from 1 to 2 in. is threaded in 1 min. 20 seconds with speed reducer attached. Pipe 2 in. and up is threaded with adaptor which fits geared die stocks. Versatile tool will thread bolts, dig holes with an auger, open and shut valves, pull wire through conduit and when used with portable winch will lift up to 1000 lbs. **Albertson & Co., Inc., Sioux City, Iowa.**

Write No. 19 on Place Mark Card—Page 32

### Compact, 23½ in. High Precision Welding Device



A precision welding device which is just 23½ in. high is compact enough to be installed in a standard "dry box" in which transistors and other electronic components are assembled. Unit is rated at 2700 watt-seconds (DC) or 50 kva (AC). Air chamber head combines low inertia with fast action and protects the work with cushion feature. Double-action cylinders make possible higher production rates. Electronic timer which can be remotely located provides for precise welding control. **Commercial Apparatus & Systems Div., Raytheon Co., 87 S. Bedford St., Manchester, N.H.**

Write No. 20 on Place Mark Card—Page 32

### Combination Ventilator-Skylight Unit



A single unit which serves as both ventilator and skylight is a gravity type ventilator that incorporates special Fiberglas components to provide quantities of diffused natural light whether ventilator damper is open or closed. Fiberglas components are strong, non-warpage and weather-resistant. **Swartwout Fabricators Inc., Kokomo, Ind.**

Write No. 21 on Place Mark Card—Page 32





## INDUSTRY'S CHEMICALS

*what's  
making news?*

*Much of the marketing action of Dow's industry-oriented teams can be neatly defined as concerned with the research and development of chemicals for specific industries, such as the petroleum industry, the automotive industry, the pharmaceutical industry. But some markets are mavericks, defying limitation, with problems common to virtually all industry. The industrial cleaning market is one of these. Here, the development of a new product, or the application of an old product to a new use pays off across the board, for all industries.*

# SOLVENT RESEARCH HELPS SOLVE A SAFETY RIDDLE

Strange as it may sound, "cleanliness" can be a two-edged sword. Take the case of conventional solvents for industrial cleaning. For the production man, these materials do an excellent job of cleaning, but their toxicity or fire hazard (or sometimes both) is high on the list of riddles for the safety man.

The solvent development program at Dow is directed toward solving the safety riddle while maximizing solvent efficiency. For example, here's what Chlorothene® NU—the latest Dow development in cold cleaning solvents—can do for you.

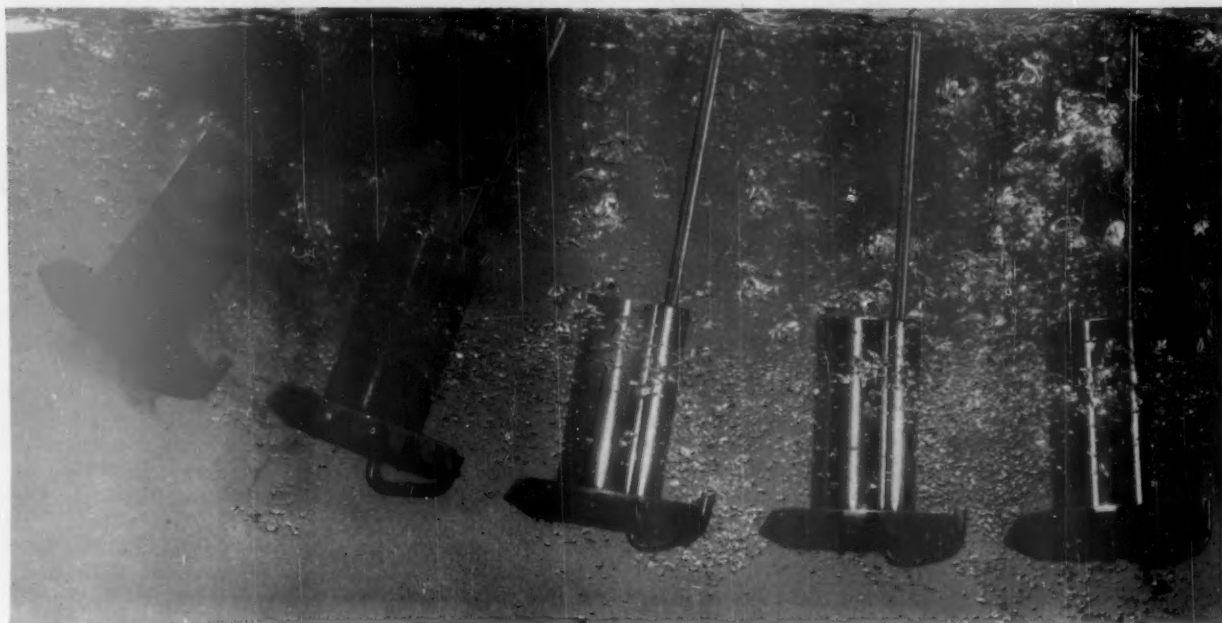
Industrial cleaning solvents grew up with mass production. But in the process of growing up, they put industry squarely between the horns of a dilemma. Production standards require

a cold cleaning solvent to be non-corrosive, economical, powerful enough to remove greases, oils, waxes, and other soils quickly, and to dry fast without leaving a residue. And safety demands that it have a low vapor toxicity rating and low flammability.

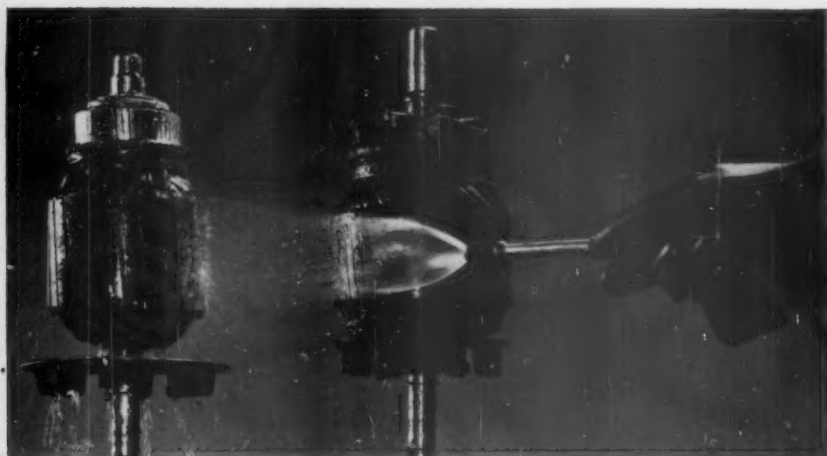
### VERSATILE CHLOROTHENE NU

Dow's newest cold cleaning solvent—Chlorothene NU (specially inhibited 1,1,1-trichloroethane) takes dead aim

A unique combination of safety and solvent power makes Chlorothene NU the ideal cold cleaner for production lines.







The fire safety of Chlorothene NU permits maintenance spraying without costly protection systems.

at this very objective. In wipe, dip, spray, or slush cleaning applications, Chlorothene NU meets all the specific safety and production requirements of a cold solvent cleaner. Its high-power solvency quickly and thoroughly removes soils. It evaporates fast with no residue remaining. The special inhibitors in Chlorothene NU make it more stable; virtually non-corrosive to metals, including aluminum and zinc; easier and more economical to recover and re-use. Chlorothene NU has no flash or fire point by standard testing methods. And just as important, it has a vapor toxicity rating unmatched by most other common chlorinated solvents.

#### SAFETY PLUS VERSATILITY

Today, this versatile performer is cleaning everything from small tools to huge missile components, from simple electric circuits to complex electronic brains, often several times from the beginning to the end of production.

But where versatility in a wide range of applications is an advantage of Chlorothene NU, Dow also markets a variety of solvents with specific advantages for specific applications. Take

the four members of the Dow family of trichloroethylene, for example: NEU-TRI®, neutral trichloroethylene; ALK-TRI®, alkaline trichloroethylene; HI-TRI®, high-purity trichloroethylene; and EX-TRI®, extraction-type trichloroethylene.

#### CLEANING MISSILE HARDWARE

HI-TRI solvent is a specially designed cold flushing agent. Its superior cleaning action, freedom from residue, no flash or fire point by all standard testing methods, and shock sensitivity, qualify it for the all-important job of cleaning missile hardware. ALK-TRI, the amine stabilized degreasing solvent, can be easily analyzed to maintain an exact solvent-stabilizer balance. NEU-TRI was designed for fast, efficient vapor degreasing. Its built-in neutral stabilizing system prevents chemical breakdown under heavy work load conditions. EX-TRI is designed for use in certain special extraction processes.

Another highly stabilized Dow solvent, perchloroethylene industrial, has a high boiling point (250°F.) which permits longer cleaning action, com-

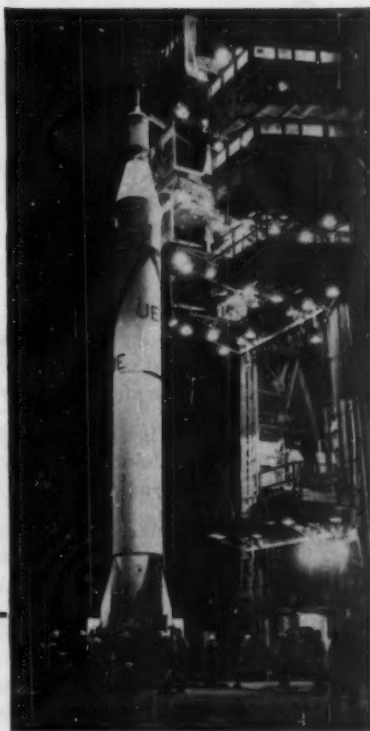
plete and thorough drying of the work and greater economy, too.

Nonflammable, low toxicity Dow methylene chloride forms the base for many solvent paint strippers. These formulations cut through even the toughest paint and protective coatings, and lift them away from metal or wood surfaces in a matter of minutes.

Dow solvents are shipped in color coded drums to facilitate identification and handling.

#### STRONG-ARM CLEANING AIDS

No discussion of Dow's role in industrial cleaning would be complete without mentioning a pair of chemical workhorses that have distinguished themselves as ingredients in scores of cleaning compounds. Caustic soda is found in almost all heavy-duty cleaning compounds, and sodium orthosilicate contributes high detergent qualities, corrosion inhibition, and excellent rinseability to many cleaning operations. Dow is a basic source for caustic soda and sodium orthosilicate for many of the nation's leading industrial cleaning specialists.



To avoid premature fuel ignition from residues, HI-TRI is specified in many cases for cleaning missile hardware.

**YOU'LL FIND** a complete discussion of the applications and properties of Chlorothene NU in a new brochure. Write for your copy. And if you wish a summary of the other Dow Solvents, ask us to include the folder METAL CLEANING SOLVENTS. Call your nearest Dow distributor or write: THE DOW CHEMICAL COMPANY, Midland, Michigan, Merchandising Department 303EE6-20.

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN





for new  
paint  
touch-up

ease... (*Binks Wren Air-Brush*)



for new  
portability...

air  
in a can (*Binks Wren Pak*)



**Binks Wren Air-Brush** is a spray gun in miniature... tailor-made for applying small amounts of standard factory- or custom-matched touch-up colors. Spray control accuracy is so good that masking is seldom needed.

**Binks Wren Pak** is a unique, canned air supply... so portable it fits in your hand. It provides spraying air for up to 30 minutes of intermittent operation.

Ask your distributor to show you both... the Binks Wren Air-Brush and Binks Wren Pak. Complete details in Bulletin A59-1R1. Get a copy from your Binks distributor, or write direct.

Ask about our spray painting school  
Open to all... **NO TUITION**... covers all phases



SPRAY GUNS



SPRAY BOOTHS



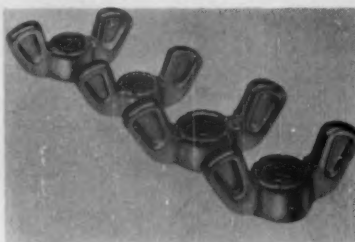
NATIONWIDE SERVICE

**Binks Manufacturing Company**  
3136-46 Carroll Ave., Chicago 12, Ill.

REPRESENTATIVES IN PRINCIPAL U.S. & CANADIAN CITIES • SEE YOUR CLASSIFIED DIRECTORY  
For More Information Write No. 208 on Place Mark Card—Page 32

## Products

### Self-Locking Wing Nuts in Five Thread Sizes



A line of self-locking wing nuts is intended to meet the need for a convenient finger tightened fastener. Made of light but sturdy Zamak 3 die cast alloy, ESNA type WC wing nut comes in thread sizes No. 8 10, 1/4, 5/16 and 3/8, in both coarse and fine threads. Nylon locking collar prevents loosening under impact, vibration or stress reversal. Nylon's wear resistance provides high degree of reuseability, important for on-off applications required. Elastic Stop Nut Corp. of America, 2330 Vauxhall Rd., Union, N. J.

Write No. 22 on Place Mark Card—Page 32

### Pillow Block Permits Easy Liner Replacement



Bronze precision liners can be replaced quickly and easily in pillow blocks of new design. Sleeve bearings are recommended for applications where shock loads, elevated temperatures and corrosive conditions are anticipated. Worn bushing or liner can be replaced without removing bottom half of housing from its support. No screws are required. Dodge Mfg. Corp., Mishawaka, Ind.

Write No. 23 on Place Mark Card—Page 32



**NEW! NEW! NEW!**

**NEW! NEW! NEW! NEW! NEW! NEW! NEW!**

**The blades  
that outlast  
all others!**

**A RADICALLY NEW METALLURGICAL APPROACH** builds unprecedented durability into Heller "Ultras". That's why they're certain to outlast all high speed steel band saws currently used in production cut-off work on ferrous metals. **IMPROVED IN EVERY WAY!** Special steel analysis . . . more advanced production methods . . . closer heat-treating control . . . stronger welds . . . more exacting 100% inspection! No wonder Heller "Ultras" deliver up to 300% more cuts per blade. Yet, the price is only 10% higher. This means as much as 75% savings in cutting costs. **TESTS CONFIRM THEIR SUPERIORITY!** Matched against all comers, at heavy feeds and higher speeds, the harder teeth, tougher bodies and more uniform full-blade flexibility of Heller "Ultras" are sure bets to win the race against time and costs. Seeing's believing!

# Heller

**"ULTRA"**

HIGH SPEED STEEL  
*metal cutting*

## BAND SAWS

TAKE THE  
GAMBLE  
OUT OF  
BUYING!

An early order for welded-to-length, protectively packaged Heller Ultra High Speed Steel Band Saws from your nearby Heller Distributor is the wisest and safest bet you'll ever make. Prompt delivery is also guaranteed!



**HELLER TOOL CO.**

America's Oldest File Manufacturer  
**NEWCOMERTOWN, OHIO**  
Subsidiary of Simonds Saw and Steel Co.

Branch Offices and Warehouses: Boston • Newark, N. J. • Detroit • Chicago • Shreveport • Los Angeles • San Francisco • Portland, Oregon

JUNE 20, 1960

For More Information Write No. 209 on Place Mark Card—Page 32

119





## how to get the most for your chemical dollar

When your operations call for limited, varied or irregular chemical supply, your local distributor of Olin Mathieson chemicals is a good man to know. He can provide you with chemicals you need quickly and economically. He can also help you with technical problems that may arise.

If your operation is such that you can schedule the regular use of large quantities of chemicals, it is to your advantage to take direct shipment from the nearest Olin Mathieson plant. Most often, however, services of producer and distributor complement each other in providing you

with a coordinated chemical supply tailored to your requirements.

We will be glad to recommend a specific purchasing pattern to fit your requirements. For a discussion date or the name of your local Olin Mathieson distributor, please write. 7449



**Olin Mathieson**  
Chemicals Division • Baltimore 3, Md.



Trisodium Phosphate • Trisodium Phosphate Chlorinated • Sodium Tripolyphosphate • Tetrasodium Pyrophosphate • Sodium Hexametaphosphate  
Monosodium Phosphate • Disodium Phosphate • Sodium Acid Pyrophosphate • Tetrapotassium Pyrophosphate • Sulfuric Acid • Hydrofluoric Acid  
Sodium Silicofluoride • Sodium Fluoride • Teox® 120 Surfactant

Ammonia • Bicarbonate of Soda • Carbon Dioxide • Caustic Soda • Chlorine • Formaldehyde • Hydrazine and Derivatives • Hypochlorite Products  
Methanol • Muriatic Acid • Nitrate of Soda • Nitric Acid • Soda Ash • Sodium Chlorite Products • Sodium Methyate • Sulfur (Processed)  
Sulfuric Acid • Urea • Ethylene Oxide • Ethylene Glycols • Polyethylene Glycols • Ethanolamines • Glycol Ethers • Surfactants • Ethylene Dichloride

For More Information Write No. 210 on Place Mark Card—Page 32





Nothing clamps a hose quicker, easier, or more economically than Eaton-Reliance Hoz-Fas-Ner®. This one-piece hose clamp goes on without fuss and bother — without time-consuming preassembly at the point of installation — and stays tight for the life of the hose. Never needs adjusting or tightening, and will not cut the hose. Hoz-Fas-Ners may be specified for both pressure and suction lines, since they exert continuous, uniform pres-

sure at all points around the inner circumference. The simplicity of design of Hoz-Fas-Ners makes them economical in cost, yet this is not your only saving. Where installing hose clamps is a repetitive operation on assembly lines, Hoz-Fas-Ners save substantially in high-priced labor. Because they are backed by the Eaton name, you can be sure of their high quality. Available in a full range of sizes. Write for specifications.



# EATON

RELIANCE DIVISION  
MANUFACTURING COMPANY

513 CHARLES AVENUE

MASSILLON, OHIO

SALES OFFICES: New York • Cleveland • Detroit • Chicago • St. Louis • San Francisco • Los Angeles

**PRODUCTS:** Engine Valves • Tappets • Hydraulic Valve Lifters • Valve Seat Inserts • Jet Engine Parts • Hydraulic Pumps  
Truck and Trailer Axles • Truck Transmissions • Permanent Mold Iron Castings • Automotive Heaters and Air Conditioners  
Fastening Devices • Cold Drawn Steel • Stampings • Forgings • Leaf and Coil Springs • Dynamatic Drives and Brakes  
Powdered Metal Parts • Gears • Variable Speed Drives • Speed Reducers • Differentials • Centralized Lubrication Systems

JUNE 20, 1960

For More Information Write No. 211 on Place Mark Card—Page 32

121





Photo courtesy of Mel Warshaw, Inc., Miami (creators of Jay Originals and Trend-Setter fashions)

**FASHION NOTE FOR 1960** — Advanced styling is an art, demanding the very epitome of creative genius. It's an incentive to feminine shoppers. And in like manner it influences industrial buyers . . even in the selection of drinking-water equipment, such as these two trend-setting models by Halsey Taylor. In fact, if it's Taylor-made, it's the most modern in its field.

The Halsey W. Taylor Co., Warren, O.



this is the new  
**WALL MOUNT** \*

It's a Halsey Taylor first! Mounts on the wall, off the floor. Compact, easy to keep clean, with no corners or crevices to catch the dirt.

\* Patent Pending



new wall-mounted  
**COFFEE BAR**

Gives instantaneous hot water for serving up to sixty 8-oz. cups of hot coffee. Goose-neck type dispenser with a push-down lever. No exposed fittings.

ASK FOR LATEST CATALOG, OR SEE SWEET'S OR THE YELLOW PAGES

For More Information Write No. 212 on Place Mark Card—Page 32

## Products

### Conduit Lubricant Seals, Protects Joints



An aluminum conduit lubricant which makes conduits easier to install and protects joints is simple and economical to use. Light application lubricates conduit for quick, smooth tightening, eliminating need for force. Lubricant lasts for life of joint, facilitates loosening, moisture-seals joints and prevents galvanic corrosion of aluminum-to-steel joints. "Penetrox" is packaged in 8 oz. polyethylene squeeze bottle with pointed spout and costs less than 1/10 of a cent per joint. **Burndy Corp., Norwalk, Conn.**

Write No. 24 on Place Mark Card—Page 32

### 500 Gal. Polyethylene Storage Tanks



Polyethylene storage tanks in the 500 gal. capacity ranges are produced in several styles—full open head, closed head with openings, flat or conical bottoms. Wide choice of access and drain fittings can be had. Molded units retain all inherent characteristics of polyethylene with particular emphasis on corrosion resistance. No outer support is needed. **Delaware Barrel & Drum Co., Wilmington, Del.**

Write No. 25 on Place Mark Card—Page 32

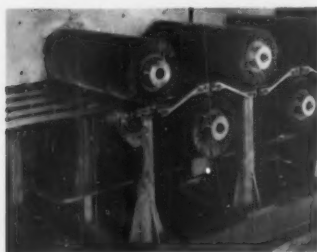
For More Information about ad on facing page  
Write No. 213 on Place Mark Card—Page 32→

**PURCHASING**





**PRECISION ROLLING** of high-carbon flat wire is accomplished on Athenia Steel's 3-stand tandem mill with automatic screwdown control.

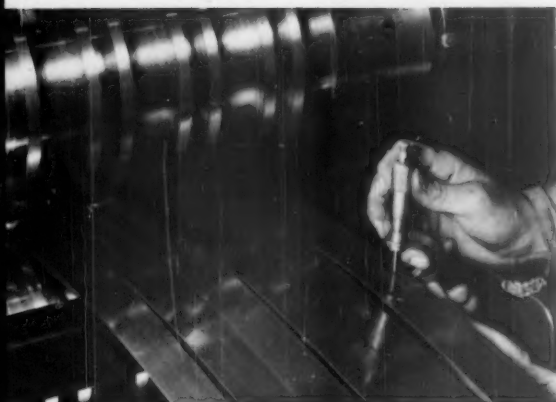


**POLISHING** and coloring gives the flat spring steel its final processing and desired finish: polished, blued, strawed or scaleless.



**ANNEALING** of Athenia Steel is achieved in these advanced, radiant type convector furnaces.

## When you need quality spring steel ...check NS-Athenia



**SLITTING** of cold-rolled spring steel requires careful quality control and precise manufacturing techniques.

The Athenia Steel Division of National-Standard Company can fill your high-quality, cold-rolled spring steel needs for hundreds of industrial applications. The high-quality of Athenia Steel is due to proper raw material selection, precise laboratory control and modern equipment and technical knowledge. Check these fine spring steels available from National-Standard:

**COLD-ROLLED ANNEALED**—thicknesses of .001" to .065"; widths of .015" to 16".

**TEMPERED SPRING STEEL**—thicknesses of .001" to .065"; widths of .015" to 6.5" in black or scaleless, Polished Bright, Polished and Blued, or Strawed.

**COLD-ROLLED STAINLESS**—thicknesses up to .040"; widths up to .500".

**NILCOR®** (cobalt base)—thicknesses up to .025"; widths to 1".

**TECHNICAL HELP** from Athenia engineers is available to determine the specific flatness, straightness, uniformity, temper, edge, finish or special feature you need. Write to Athenia Steel Division, National-Standard Company for engineering assistance, or ask for new brochure describing Athenia products, service and manufacturing facilities.



**Athenia Steel Division**

**NATIONAL-STANDARD COMPANY**

**Clifton, New Jersey**





## NS SPECIAL WIRE (575,000 psi) WRAPS

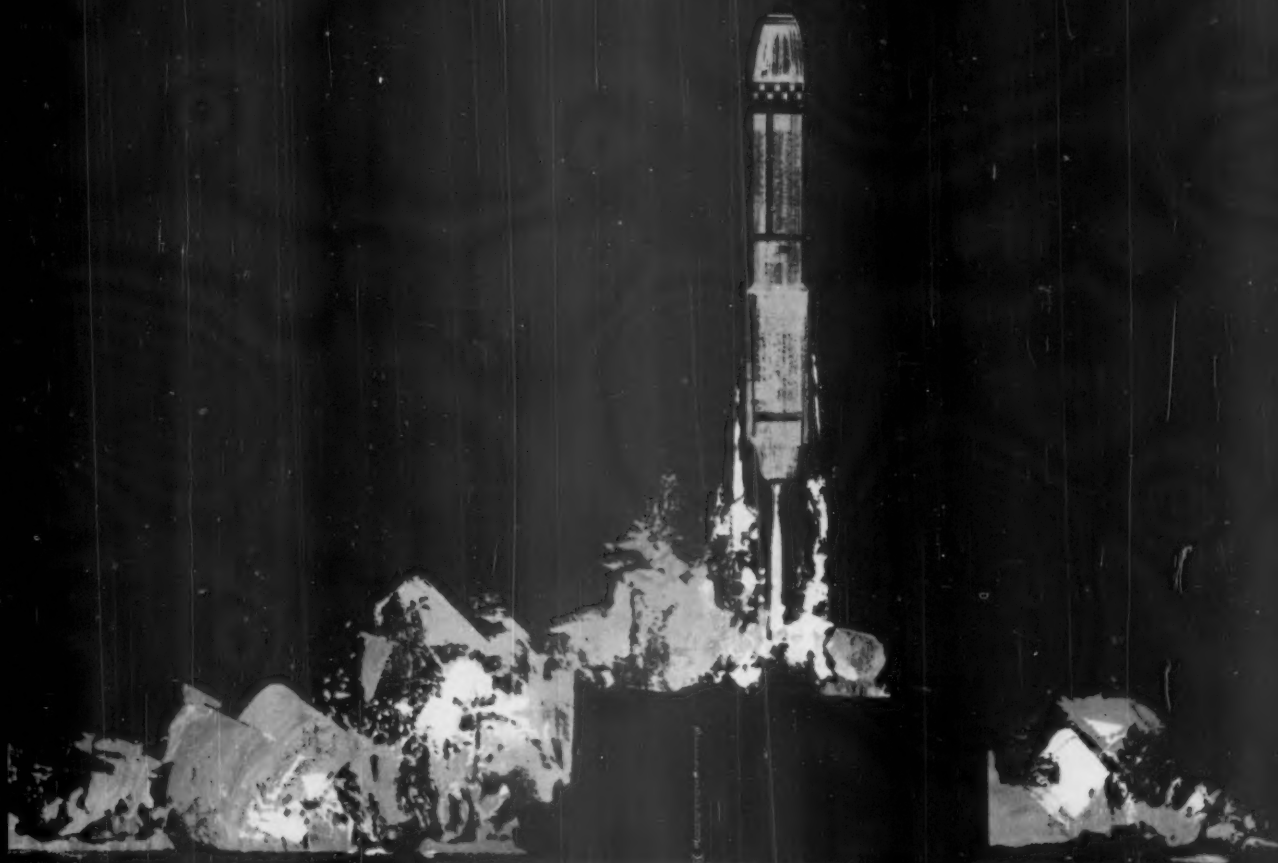
In the development of solid-fuel rocket cases, a leading manufacturer fabricated and experimented with welded steel and glass fibers, as well as many steel wire specimens, to find a fuel case material with the most favorable strength-to-weight ratio for fuel case applications.

**EARLY DEVELOPMENT STAGES**—At the outset of their testing program, the rocket manufacturer asked National-Standard to develop .004" wire with 575,000 psi, the ultimate tensile strength required of steel wire to provide the

strength-to-weight ratio needed. The wire was to be made into tapes of uniformly-stressed wires, coated with epoxy resin to separate the wires, and wound over collapsible mandrels to form the fuel case.

**NATIONAL-STANDARD ENGINEERS** produced .004" high-carbon steel wire that met every specification, after intensive testing with many types of wire and finishes. Special wire developed by NS met rigid size tolerances, residual twist and controlled cast requirements.

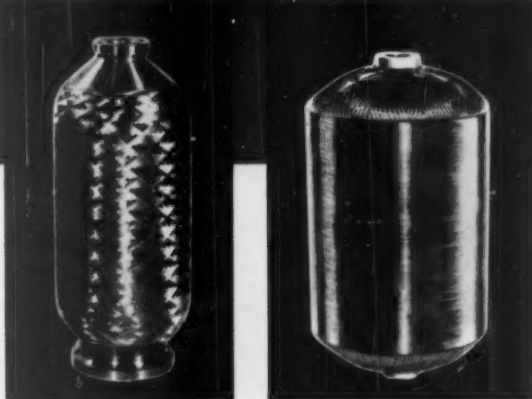




## ROCKET FUEL CASES

The end result of NS—customer cooperation was the ability to produce wire-wrapped rocket cases with very high hoop stress and lower cost than those being produced by other methods. And the fuel case manufacturer is able to provide maximum case-to-case reliability.

EXPERIENCED ENGINEERING HELP of this kind is available to you from National-Standard to meet special or unique high-quality wire applications. Write for additional information to National-Standard Company, Niles, Michigan.



**WIRE-WRAPPED ROCKET CASES** are wound over collapsible mandrels using a number of strands of very high strength, small diameter wire formed into tapes.



*Manufacturer of Specialty Wire and Metal Products*

**NATIONAL-STANDARD COMPANY**

**Niles, Michigan**



# NATIONAL-STANDARD PLANTS ARE SERVICE-LOCATED NEAR YOU...

National-Standard Company is a specialized manufacturer of high-quality wire, wire cloth, flat spring steel, perforated metal, and other products. With manufacturing and warehousing facilities around the world, National-Standard is ideally organized to serve your special wire or metal product requirements. For fast delivery or engineering services, contact the National-Standard plant or warehouse nearest you.

## NATIONAL-STANDARD DIVISION

*Music spring wire, stainless steel wire, super-alloy wire, plated wire, tire bead wire, flat and tubular braid.*

**Niles, Michigan**  
**Akron, Ohio**  
**Los Angeles, California**  
**Kansas City, Missouri**

## ATHENIA STEEL DIVISION

*Cold rolled high-carbon flat spring steel, tempered or annealed; alloy steel, high-carbon and stainless steel, flat wire.*

**Clifton, New Jersey**

## REYNOLDS DIVISION

**Wire Cloth Plant**  
*Full range of weaves, metals, and coatings; specialty weaves.*

**Dixon, Illinois**

**Cross Perforated Metals Plant**  
*Commercial, ornamental and industrial perforated metals.*

**Carbondale, Pennsylvania**

## WORCESTER WIRE DIVISION

*Fine high and low carbon wire, music spring wire, stainless steel wire, plated wire, other specialty wires.*

**Worcester, Mass.**

## WAGNER LITHO MACHINERY DIVISION

*Metal decorating equipment*

**Secaucus, New Jersey**

**NATIONAL-STANDARD** plants and facilities are also located in Guelph, Ontario; Kidderminster, England; Port Elizabeth, South Africa; Cologne, West Germany; and Mexico City, Mexico.

## WAREHOUSES

### NATIONAL-STANDARD WAREHOUSE, Plainville, Conn.

*Music spring wire and stainless steel wire, high-carbon cold-rolled annealed strip and spring steels.*

### NATIONAL-STANDARD WAREHOUSE, Akron, Ohio

*Music spring wire and stainless steel wire.*

## WAREHOUSE DISTRIBUTORS

### CENTRAL STEEL & WIRE COMPANY, Chicago, Illinois

*Music spring wire.*

### KRUSEN WIRE & STEEL COMPANY, Los Angeles, California

*Music spring wire and stainless steel wire, high-carbon cold-rolled annealed strip and tempered spring steels.*

### LAPHAM-HICKEY STEEL CORPORATION, Chicago, Illinois

*High-carbon cold-rolled annealed strip and tempered spring steels.*

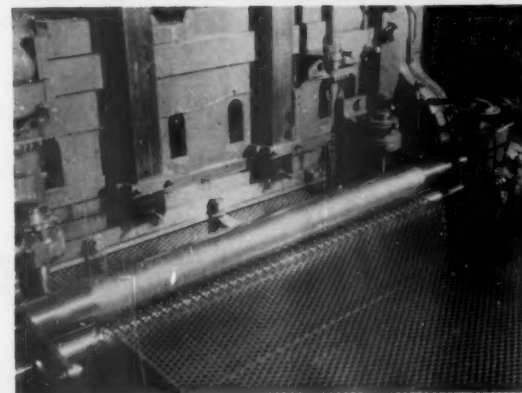
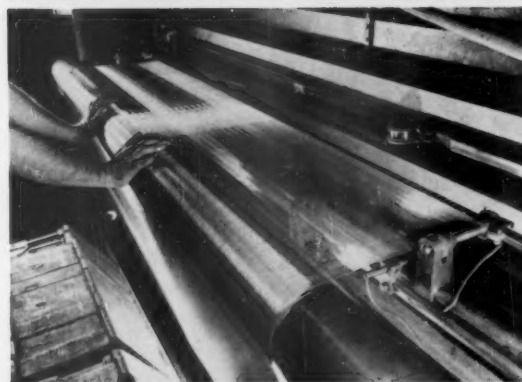
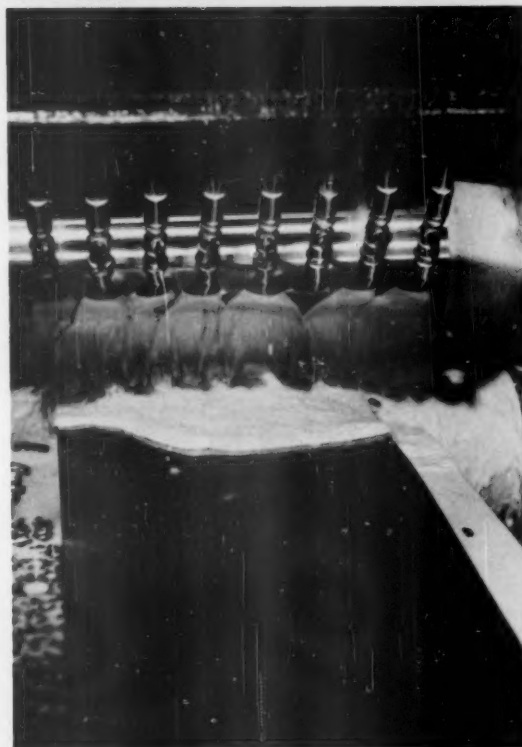
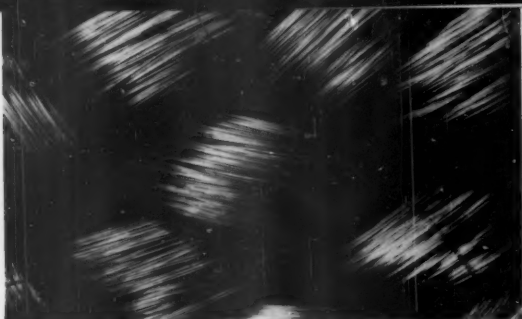
### VOSS-DAVIDSON STEEL COMPANY, Detroit, Michigan

*High-carbon cold-rolled annealed strip and spring steels.*

**DISTRIBUTORS of CROSS** Perforated Metals are located in major industrial areas. See your local classified telephone directory.



**NATIONAL-STANDARD COMPANY**  
**Niles, Michigan**





## **2** reasons our ads always say...

### **"ORDER AMERICAN CHAIN FROM YOUR DISTRIBUTOR"**

**1 • BECAUSE** in AMERICAN CHAIN's plan of distribution, the distributor has always been the master link. Our policy is one of full partnership with our distributors. They do more than just stock a complete line of chains, fittings and attachments appropriate to their type of wholesale operation. They are also kept up-to-date on the latest information about new products, new improvements, packaging changes and, of course, changes in prices and profits on American Chain products. Moreover, they are advised about new products in advance of introduction so that there's always ample time for ordering and stocking before customers first read about them in trade paper advertisements.

• • •

**2 • BECAUSE** the AMERICAN CHAIN distributor is, in effect, our representative in his locality. Back of him stands our Regional Warehouse and our District Sales Office whose salesmen are qualified to furnish a wealth of information on the subject of welded and weldless chain for all purposes. And back of all these men is the American Chain & Cable Company, Inc., of Bridgeport, Conn., and the American Chain Division at York and Braddock, Pa., and the famous Acco Giant trademark which for decades has meant the standard of value in chain.



## **AMERICAN CHAIN**

American Chain Division • American Chain & Cable Company, Inc.  
Bridgeport, Conn. • Factories: \*York and \*Braddock, Pa., \*San Francisco, Calif.

Sales Offices: \*Atlanta, Boston, \*Chicago, \*Denver, Detroit, \*Houston  
\*Los Angeles, New York, Philadelphia, Pittsburgh, \*Portland, Ore., \*San Francisco  
\*Indicates Warehouse Stocks





Rope Wire      Hose Wire  
Fuse Wire      Lamp Wire  
Pin Ticket      Match Wire  
Bonnet Wire      Steel Heddle  
Spiral Binding Wire • Box Stay Wire  
Bookbinders Wire • Stapling Wire  
Tin Shaft Wire • Glass Netting Wire  
Tinned Covering Wire • Hair Pin Wire  
Tinned Anneal Tag Wire • Weaving Wire  
Filler Wire • Ring Traveler • Mandrel  
Wire • Tea Bag Wire • Stitching Wire  
Liquor Stapling Wire—Brush.

## Specialty Wire... our cup of tea

**Problem:** Staple the tea bag to the string and the string to the trademark tab. Make the attachment tear-proof and keep stapling machines running smoothly. Meet strict Government regulations involving cleanliness of wire, metallic content and corrosion factors.

**Answer:** Cal! Prentiss. This major tea firm did. Now, "being in hot water" is no problem at all. Write, call or wire: Prentiss Works, *Riverside-Alloy Metal Division*, H. K. Porter Company, Inc., Holyoke, Mass.

**RIVERSIDE-ALLOY METAL DIVISION**

**PORTER**

**H. K. PORTER COMPANY, INC.**

PORTER SERVES INDUSTRY with steel, rubber and friction products, asbestos textiles, high voltage electrical equipment, electrical wire and cable, wiring systems, motors, fans, blowers, specialty alloys, paints, refractories, tools, forgings and pipe fittings, roll formings and stampings, wire rope and strand.

For More Information Write No. 215  
on Place Mark Card—Page 32

## Products

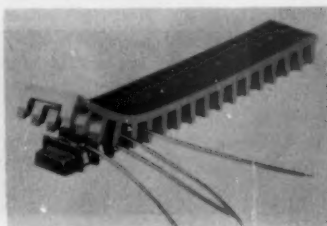
### Dial Thermometers for Duct Applications



Mercury activated dial thermometers for duct applications which can be installed for adjustable angle, rigid or remote reading, stress easy reading and dependable accuracy. Other features include: uniform graduated scale for the entire range; a micro meter adjustable pointer; all stainless steel system, plus a 10 to 12 in. sensitive stainless steel bulb with union connection flange. Available in ranges to meet all requirements with 4½, 6, and 8 in. dials, in black enameled aluminum cases with chrome plated slip ring. **Weksler Instruments Corp., Freeport, L. I., N. Y.**

Write No. 26 on Place Mark Card—Page 32

### Rubber Terminal Block Covers Provide Safety



Rubber terminal block covers represent a safety innovation for many industrial users. Wherever terminal blocks are used, there is inherent danger of fires, short circuits and disruption of electrical equipment. Rubber covers,

(Please turn to page 130)

**Super Excelo**  
and  
**RECORD MAKER**  
**CONVEYOR BELTS**

**TOUGH**  
**TOUGH**  
**TOUGH**

*made by*  
*Republic*  
*Rubber*  
*for the*  
*toughest*  
*service!*

**REPUBLIC**  
**RUBBER**

DIVISION LEE RUBBER & TIRE CORP.  
YOUNGSTOWN, OHIO



Nylon Finish Sheet  
Packing Too! Write  
Dept. D.

For More Information Write No. 222  
on Place Mark Card—Page 32

**PURCHASING**



*"this **standard** centerless  
wheel doubled our  
production rate"*

*"The performance of this wheel never ceases to amaze us. It has replaced three different wheels formerly used for the same operations. We are getting more pieces per dress, 15% faster infeed, and 20% to 52% longer wheel life. Our costs are much lower, you can be sure."*



This manufacturer of shock absorber shafts has found that National Standards by Carborundum can save valuable time and real money. Be sure you are using the *right* wheels on your jobs. Call your Carborundum distributor for competent engineering service and specify "Job-Engineered" National Standards by

**CARBORUNDUM®**

Write for Catalog of National Standards by Carborundum to Bonded Abrasives Division, Dept. 81-012, The Carborundum Company, Niagara Falls, N. Y.

For More Information Write No. 216 on Place Mark Card—Page 32

JUNE 20, 1960

129



# PLASTIC STEEL®

SAVED THIS  
POWER COMPANY\*

**\$75,000**

## THIS DIESEL GENERATOR

unit was out of action because the wet sleeve cylinder liners and block were badly corroded.

**The strongest, toughest,  
most versatile repair  
and tooling material  
available today!**

Plastic Steel, THE ORIGINAL EPOXY REPAIR MATERIAL, and other Devcon products are used by steel mills, chemical plants and many other industries for repairing worn parts, salvaging cracked castings, sealing leaking hydraulic systems and tanks — building up worn pumps and valves — altering cams and gears — repair-

## PLASTIC STEEL® A

(Putty Type)

was applied to the corroded areas, allowed to harden for 2 hours and ground smooth. No heat or welding was required. All of the liners were reinstalled—and now, 2 years later, the unit is performing at peak efficiency. Cost of material—only \$10!

\*Bahamas Electricity Corp.,  
Nassau, Bahamas

ing fuel and water lines — even under pressure. Approved under Mil. Spec. MIL-C-15202. Bonds iron, steel, aluminum, brass, bronze, wood, ceramic, etc. to itself or each other.

Write today for free case histories of how Plastic Steel and other Devcon products have saved time and money on all kinds of plant maintenance jobs. Our laboratory and engineering staff is available to help with your special problems — no obligation, of course.



## DEVCON CORPORATION

61 ENDICOTT STREET, DANVERS, MASS.

Reg. U.S. Pat. Off.

A COMPLETE LINE OF QUALITY PRODUCTS FOR  
PERMANENT REPAIRS AND PLASTIC TOOLING.

Order a supply from your local Industrial Distributor today.  
Free catalog and engineering reports available on request.

\*Plastic Steel is the registered trade mark for Devcon Corporation's metallic molding and filling compound.

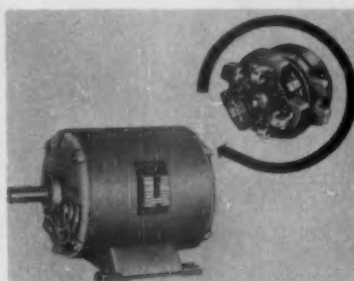
For More Information Write No. 217 on Place Mark Card—Page 32

## Products

(Continued from page 128)

which are available in Neoprene, Buna-N or Silicate Rubber, come in three basic forms. One type is flexible casing, constructed with a wall between each terminal pole. Second type is designed for barrier strips; each terminal is grooved to receive terminal strip wall, and each connecting wire is separated by dividing wall. Third model is thimble-type terminal cap which fits over individual pole. **TA Mfg. Corp., 4607 Alger St., Los Angeles 39, Calif.**  
Write No. 27 on Place Mark Card—Page 32

## Automatically Protected Motors



A line of inherent automatically protected motors—three-phase, ¼ through 3 HP, AC—consists of 67 different types of open motors in a wide variety of voltages, speeds and mountings. Complete self-protection, from both temperature and current, is provided against severe overloads, stalling, single phasing, unbalanced voltage, high ambient temperatures and motor ventilation obstruction. Protector is assembled and completely wired inside the motor at the factory, saving on installation costs. **Kingston Conley, Inc., Div. of Howell Electric Motors Co., 900 North Ave., Plainfield, N. J.**  
Write No. 28 on Place Mark Card—Page 32

## Wrap-On Asbestos Pipe Insulation

A wrap-on asbestos insulation that is both flameproof and weatherproof is intended for industrial applications requiring an easy-to-apply, economical insulating material. Product is particularly adaptable to insulating work un-

(Please turn to page 134)

For More Information about ad on facing page  
Write No. 218 on Place Mark Card—Page 32→

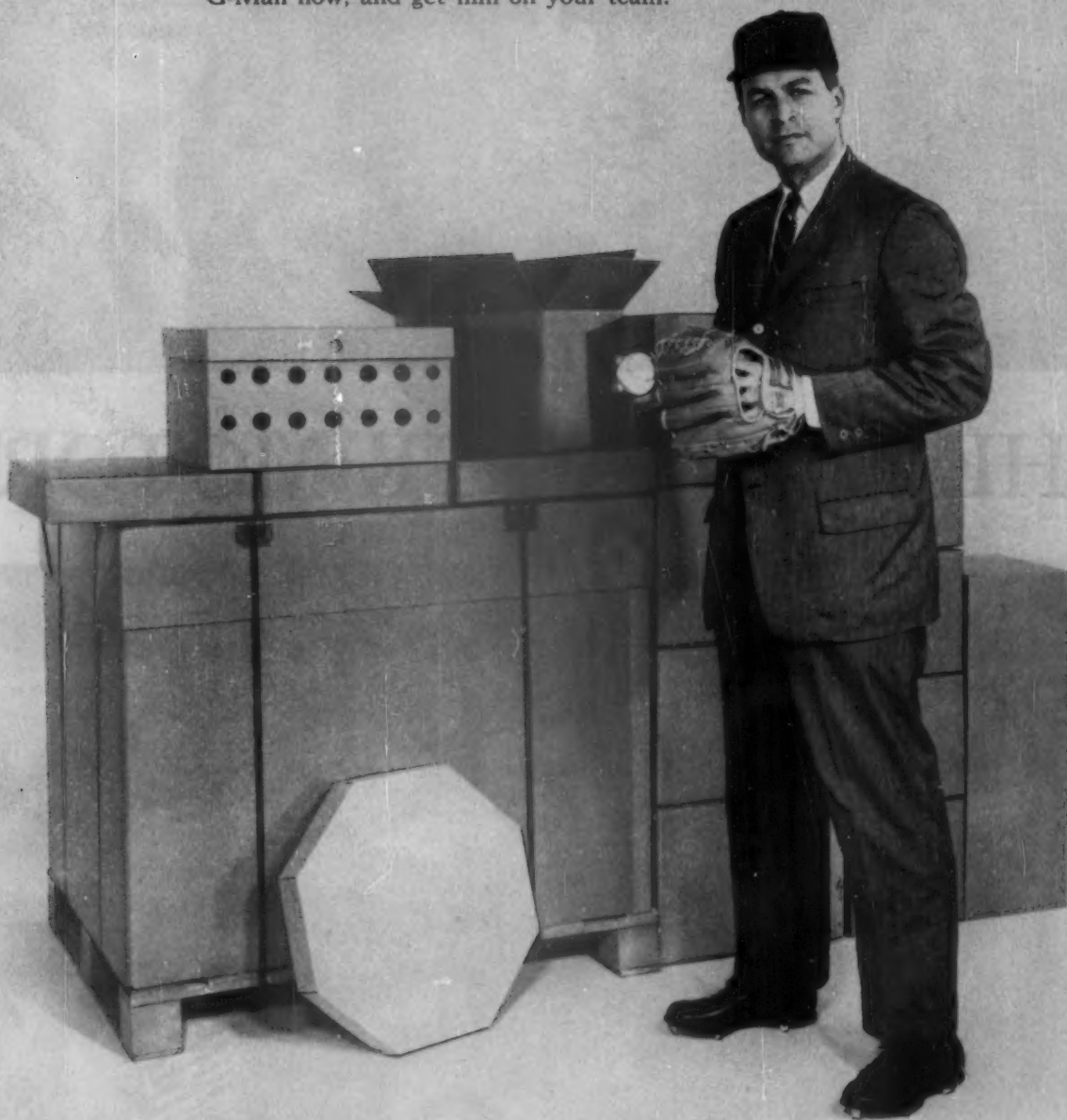
PURCHASING



# GAYLORD PACKAGING DELIVERY IS ALWAYS ON THE BALL

Your packaging operation can't get to first base without steady container delivery. So make Gaylord your mainstay—because Gaylord's 16 plants all over the country pitch in to keep your boxes coming, day in and day out, when you want them, where you want them.

Don't let erratic supply throw you a curve. Call your nearby G-Man now, and get him on your team.



**CROWN ZELLERBACH CORPORATION**  
GAYLORD CONTAINER DIVISION



IN CANADA • CROWN ZELLERBACH  
CANADA, LTD. VANCOUVER, B. C.

HEADQUARTERS, ST. LOUIS  
PLANTS COAST TO COAST

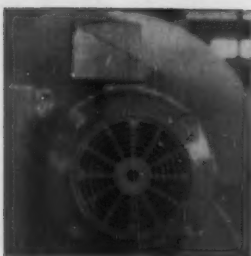




## THE MAN & THE MOTORS







## Mr. Westinghouse\* brings Kling Bros. Engineering modified *Life-Line*<sup>®</sup> "A" motor to replace expensive shop-built drive

To meet the demanding requirements of a motor for their high inertia friction saws, Kling Brothers Engineering Works had been forced to fabricate their own motor frames, brackets and shafts. Balancing was also done in their shop to meet the exacting mechanical tolerances.

The Kling saw uses the motor shaft as the spindle head with the motor mounted on a special base located on their machine. Mounting tolerances must be held to 0.001".

When Kling called in Mr. Westinghouse, he suggested some modifications to the standard Life-Line<sup>®</sup> "A" motor to meet all their requirements. One compact unit now serves their needs . . . at much less cost than their handmade drives.

The Westinghouse Life-Line "A" motors feature a pull-out torque of 350 to 400%. To accommodate the high radial thrust, oversize bearings and shafts are used. Locked bearings limit any end play of shaft. A tapered shaft permits the saw blade to be mounted directly on the motor. A coordinated balancing program at Buffalo (with motor alone) and the Chicago area M & R shop (complete with blade) assures perfect performance of the finished machine.

Mr. Westinghouse can help you with your drive needs whether they are standard or special. You can depend upon him to give you peak performance just as he did at Kling.

\*Ralph Recha, Westinghouse Sales Engineer in Chicago.

# FROM WESTINGHOUSE



## Mr. Westinghouse\* and the *Life-Line*<sup>®</sup> "A" motor brought 56,940 hours' continuous service in highly corrosive atmosphere to Allied Chemical's General Chemical Division

When General Chemical called in their Westinghouse sales engineer back in 1953, they had a serious drive problem. An electric motor was required for 24-hour service in an atmosphere containing hydrogen chloride, sulphur dioxide and sulphur trioxide. Ambient conditions varied from 70° to 100°F.

A Westinghouse Life-Line "A" Type TEFC motor was selected to power a screw conveyor that feeds raw material at the rate of seven tons every 24 hours, 365 days per year, from storage hoppers. A motor breakdown would result in a two-hour shutdown of the equipment it serves.

After more than 6½ years of 'round-the-clock operation, this Westinghouse Life-Line "A" motor is still giving trouble-free service under very severe operating conditions. Such a record indicates many more years of outstanding service.

Mr. Westinghouse is well equipped to step in and help you solve your drive problem . . . just as he did at General Chemical Corporation.

\*Tom G. Broussard, Westinghouse Sales Engineer in Philadelphia.

J-22156-R

Call in The Man from Westinghouse when you need help on your electrical drive requirements. He's well equipped to supply motors from fractional hp to hundreds of "horses." And he'll show you how to save money . . . whether it's a shelf

item or a custom-engineered motor you need. For additional information write: Westinghouse Electric Corporation, P.O. Box 868, Pittsburgh 30, Pa.

**YOU CAN BE SURE... IF IT'S Westinghouse**

TUNE IN WESTINGHOUSE-CBS TV-RADIO COVERAGE, PRESIDENTIAL CONVENTIONS, JULY 10-29

For More Information Write No. 219 on Place Mark Card—Page 32



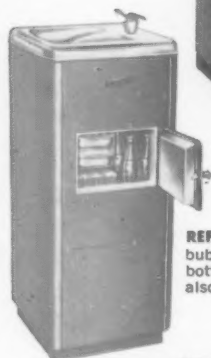
## CORDLEY COOLERS

**Better Built  
Better Guaranty  
Better Buy**



**CORDWALL**  
off the floor,  
on the wall.

**BUBBLER**  
models —  
3 to 27 G.P.H.



**REFRIGERATOR**  
bubbler and  
bottle models —  
also hot and cold.

**REMOTE**  
for hollow walls,  
also other models.



**A Model For Every Need.  
Send for catalog.**



2432

**CORDLEY & HAYES**

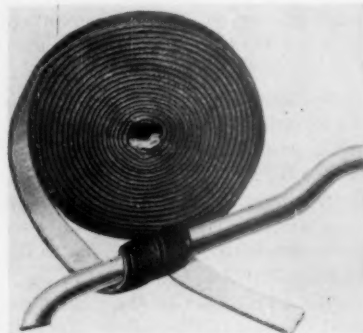
443 Park Avenue South, New York 16, N. Y.

For More Information Write No. 220  
on Place Mark Card—Page 32

## Products

(Continued from page 130)

der difficult application conditions, such as for bent or curved instrument lines or pipes or under close-clearance conditions. Insulation consists of long-fibered as-



bestos rovings, completely enclosed in a tubular, woven asbestos jacket, with exposed surfaces and edges heavily coated with Neoprene. It can be removed and reapplied without loss of insulating efficiency. **Union Asbestos & Rubber Co., Fibrous Product Div., 1111 W. Perry St., Bloomington, Ill.**

Write No. 29 on Place Mark Card—Page 32

### Short-Run Nylon Castings Up to 6 lbs.



The American licensee of a European process offers an exclusive method for casting nylon parts up to 6 lbs in weight with fractional tooling costs, lower running rates and short run requirements. Process is particularly useful for those who face critical problems of lubrication, complex machining or corrosion or abrasion resistance, yet who have had to restrict nylon use

(Please turn to page 138)

## ballistics with statistics

Behind the launching pad lie years of statistics.

And years of statistical specialization have given Wall tubing reliability in meeting the critical test. Exhaustive testing assures that Wall Tube's stainless steel, nickel and nickel alloy tubing will be of the highest quality.

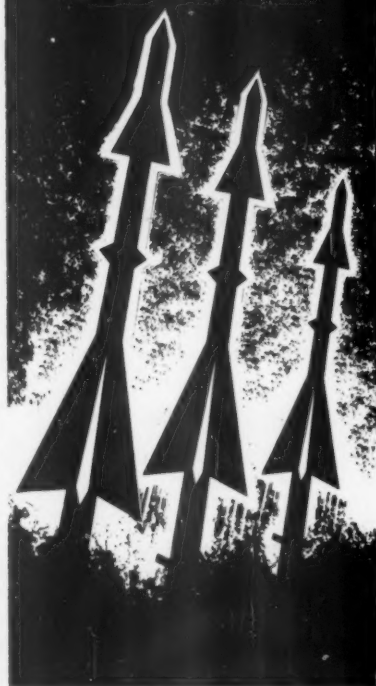
Before you procure small diameter tubing of any grade, let a Technical Sales Representative demonstrate Wall Tube's know-how—that developed from demanding application.

### RANGE OF MANUFACTURE

Stainless Steel—Welded and Cold Drawn—1 1/8" OD to 3 3/2" OD; 0.083 to .008 walls. Seamless—1/4" OD to 3 3/2" OD; .049" to .008" walls. Nickel and nickel alloy—seamless, 1/4" OD to 3 3/2" OD; .049" to .008" walls.

**WALL TUBE  
AND METAL  
PRODUCTS CO.**

**NEWPORT, TENN.**



For More Information Write No. 221  
on Place Mark Card—Page 32

PURCHASING





Clark parts being loaded for air shipment... five minutes from the Clark Central Parts Depot.

Photo courtesy of United Air Lines

## ~~DOWNTIME~~

Costs start climbing the minute a fork truck goes out of service. The national average for truck downtime is conservatively estimated to be \$16.48 per hour. An important reason why fast, qualified parts service is essential.

It's why Clark dealers offer you the largest inventory of parts in the industry. It's why Clark maintains a 16,000 mile private wire communication system. It's why Clark has built a multi-million dollar parts warehouse near Chicago's Midway Airport.

Everything in the Clark service system is geared to speed. Vital materials handling equipment must be back on the job *fast!* To assure you of fast service Clark provides you with over 117

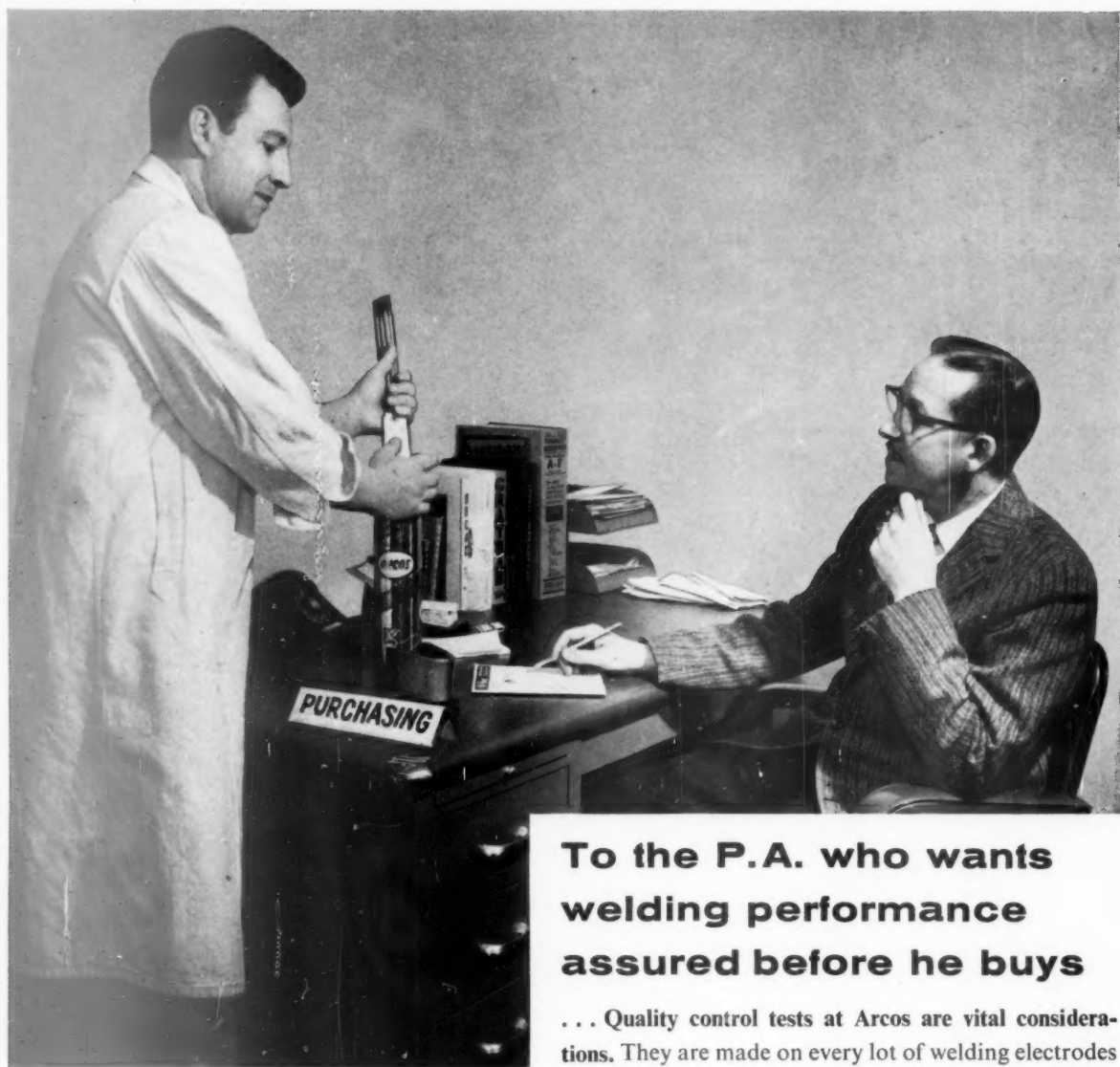
service facilities throughout the nation... each carrying a complete parts inventory. To back this up, the Clark Central Parts Depot maintains an inventory of over 5 million parts... emergency parts that can be air-shipped to any part of the country in a matter of hours. *Only* Clark offers you this service.

Want to see how it's done? A colorful brochure and a film strip describing this service system are available through your local Clark dealer. You'll find him listed in the yellow pages under "Trucks, Industrial." Or, if you prefer, write direct to: Clark Parts Service, Clark Equipment Company, Battle Creek, Michigan.

**CLARK®  
EQUIPMENT**

For full details, circle 77 on reader service card





## To the P.A. who wants welding performance assured before he buys

... Quality control tests at Arcos are vital considerations. They are made on every lot of welding electrodes to be sure that your own welding results will be exactly as promised. There are at least 18 separate controls to guarantee you high quality ... low cost ... trouble-free production. Whatever you weld, Arcos offers a full-line of products plus technical assistance, if needed, to make your purchasing decision more profitable.

*For full information on the Arcos line send for new Welding Guide and Catalog.*

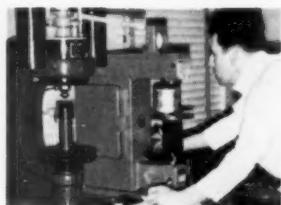
# ARCOS

**QUALITY WELD METAL  
ARCOS CORPORATION**

1500 S. 50th St., Philadelphia 43, Pa.



**ASSURING CHEMICAL ANALYSIS**



**HARDNESS TESTING**



**INSPECTION OF WELD METAL**



**CHECKING COATING CONCENTRICITY**

For More Information Write No. 223 on Place Mark Card—Page 32

For More Information about ad on facing page  
Write No. 224 on Place Mark Card—pg. 32→  
**PURCHASING**



ANOTHER **NORTON** PRODUCT

# *the New* **VIZI-DISC**

*lets you see  
your work while  
you grind. It cuts  
cooler and gives you  
pin-point accuracy*

The unique shape of the METALITE VIZI-DISC gives it "see-through" like a fan blade or an airplane propeller. The operator can see right through the work area of the disc. Obviously, the intermittent action means cooler operation. Get a free demonstration of Vizi-Disc. Just call your Behr-Manning representative or write Dept. PU-6, BEHR-MANNING CO., TROY, N. Y., A DIVISION OF NORTON COMPANY.



**BEAR**  
BRAND

*Coated Abrasives*



Here is the VIZI-DISC mounted on a portable electric grinder, ready to run. Note the unique shape with parallel sides.



As the grinder starts, note the spinning pattern, similar to an airplane propeller or the blade of an electric fan.

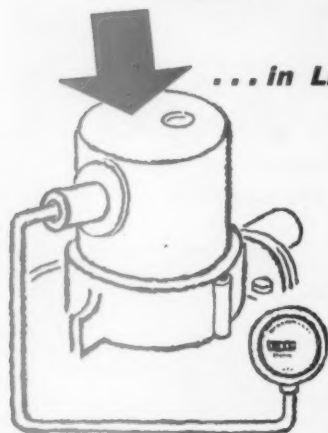


Full rpm. With the VIZI-DISC there is no blind spot. You see your work while you work, as the grinder gets revved up.

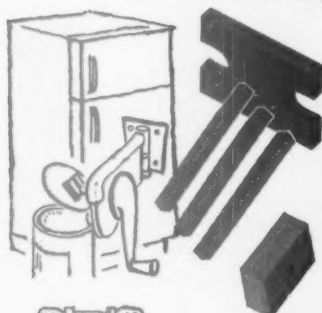




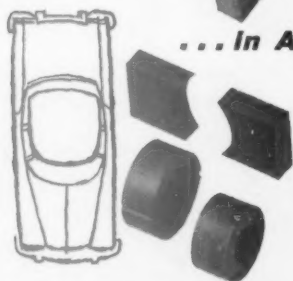
## HOW CERAMIC MAGNETS ENERGIZE NEW IDEAS



**... in Liquid Flow Registers** • Water and liquid meters of all kinds can be read at a distance with the remote-indicating "Read-O-Matic" Register developed by the Badger Meter Mfg. Co., of Milwaukee. Heart of the "Read-O-Matic's" self-contained generator is an inexpensive 6-pole ring magnet of Stackpole Ceramagnet. The quick release of the magnet under spring tension induces a 3-volt pulse in 6 coils. This is accurately transmitted to a remote totalizing counter.



**... In Appliances** • Powerful, low cost Ceramagnet ceramic permanent magnets open, close and hold doors; put *snap* into snap-action switches and thermostats; catch lids from can openers; increase lint catcher efficiency . . . make dozens of other magnet uses commercially practical for the first time. Ceramagnet magnets require no keepers; retain magnetism indefinitely, can be molded in practically any shape.



**... In Automotive Equipment** • High coercive force and high electrical resistivity make Ceramagnet ideal as field magnets in small dc motors. In addition, these ceramic magnets are likewise being investigated for use on fuel-pump drives, speedometers, ammeters, carburetors, and other devices.

*Where can YOU use Ceramagnet? For practical suggestions, and engineering details, write for Stackpole Bulletin, RC-11A. STACKPOLE CARBON COMPANY, St. Marys, Pa.*

# STACKPOLE

*CeraMAGNET*

FERRITE PERMANENT MAGNETS

Ceramag® ferromagnetic cores  
Slide & Snap Switches • Electrical contacts • Coldite 70+ fixed composition resistors • Variable composition resistors • Brushes for all rotating electrical equipment  
Graphite bearings, seal rings & anodes . . . and many other carbon, graphite and electronic components.

For More Information Write No. 225 on Place Mark Card—Page 32

## Products

(Continued from page 134)

to large volume runs of extremely lightweight parts. Process makes use of higher viscosity nylon, but there is almost no limitation on cast-in inserts, threads, intricate shapes or varying thicknesses. **Nylon Molded Product Corp., Dept. R 173, Garrettsville, Ohio.**

Write No. 30 on Place Mark Card—Page 32

## Industrial Ladder Features Safety Devices



A safety ladder features a self-leveling device which automatically adjusts the ladder's legs to any uneven terrain and automatically locks in place until pin is pulled. Fabric-reinforced rubber sling attachment fitted over the top of each rail holds ladder snugly against piles, building corners, pipes, etc. Ladders are made of hemlock with hickory or aluminum rungs. Special protection against splintering and atmospheric changes can be had with plastic impregnated protective covering on rails. Leveler, sling and protective covering are available separately. **Industrial Ladder Co., 1212 Powell St., Oakland, Calif.**

Write No. 31 on Place Mark Card—Page 32

## Remote Indicating Crane Scale

A remote indicating crane scale provides for weighing and handling material in one operation and solves the problem of convenient, accurate readability. Load element and indicator are (Please turn to page 142)

For More Information about ad on facing page  
Write No. 226 on Place Mark Card—Page 32→



*Allis-Chalmers uses*  
**RYKON Grease**  
*in bearing shield*  
*—offers farmers*  
*better disc harrow*

**Can RYKON Grease**  
**help you improve**  
**your product?**

You expect more from  and you get it!

Maynard Walberg, Allis-Chalmers project engineer, and Standard Oil lubrication specialist Fred Parkinson, examine disc harrow bearing assembly. Fred is well equipped through training and experience to help industrial customers with lubrication problems. He has been doing this work for 11 years at Standard. He has a degree in chemistry and engineering from Brown University. Plus that, he has completed the Standard Oil Sales Engineering School.

**Situation:** Bearings of a disc harrow in service are always turning in dusty conditions, oftentimes completely covered with soil. Such bearings in the Allis-Chalmers harrow are protected with grease-coated rubber shields. The grease guards against dirt getting past the shield and into the bearing.

**What was done:** Allis-Chalmers project engineer in the LaCrosse, Wisconsin plant, Maynard Walberg, called Fred Parkinson, Standard Oil lubrication specialist, for a sample of RYKON Grease. In conditions simulating field service, RYKON Grease was tested. Bearings were rotated in the most abrasive dirt available—Mississippi sand with a high quartz fraction.

**What happened:** Tests were started and run to destruction. Prior to the use of RYKON Grease, bearing failures occurred at 500 hours. On switching to RYKON Grease, these tests were pushed to 2,000 hours. At this point, tests were stopped. Bearings were still in operating condition.

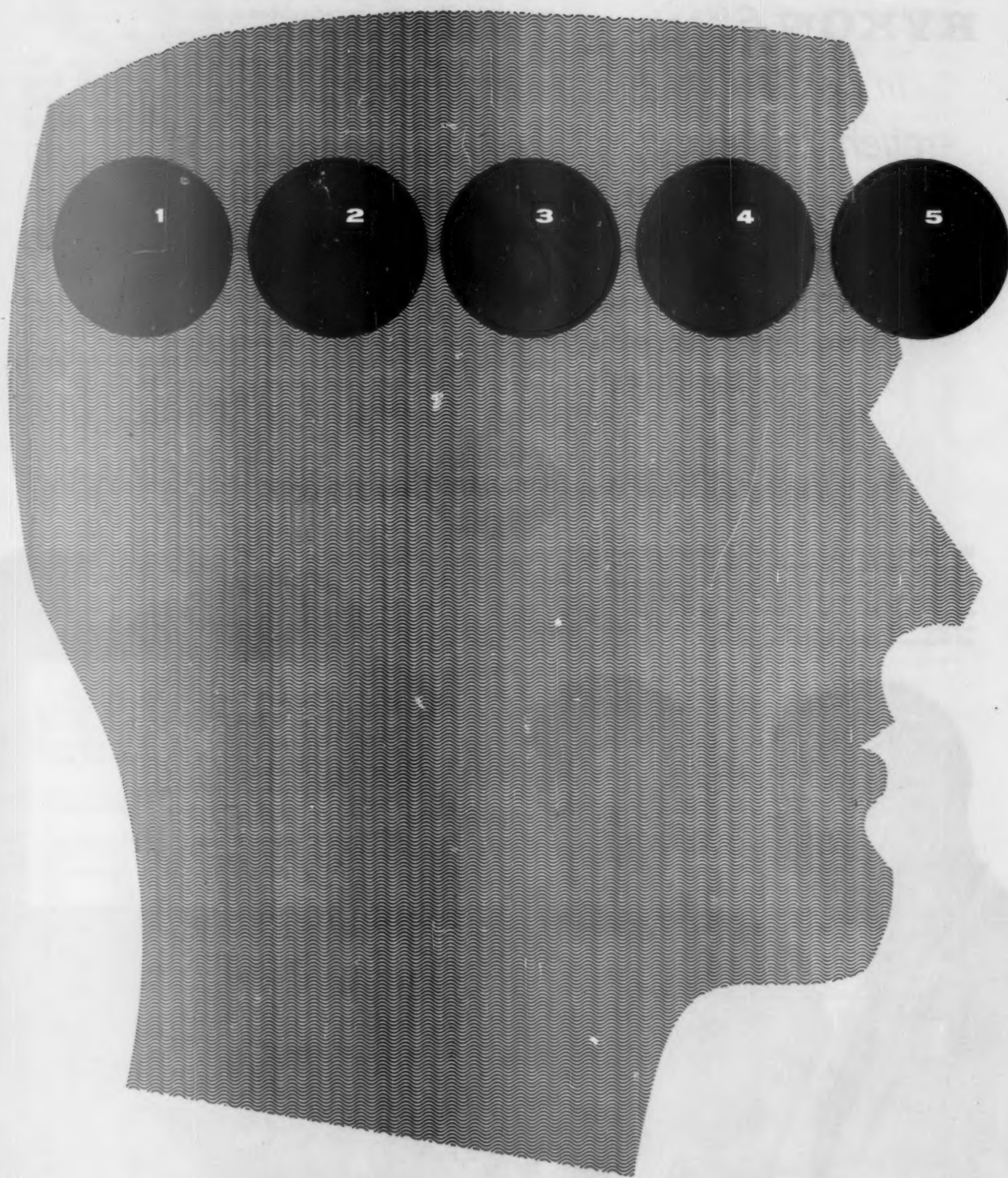
**What you can do:** Find out how RYKON Grease might help you offer your customers a better product. Inquire of the Standard Oil lubrication specialist nearest you anywhere in the 15 Mid-west or Rocky Mountain states. Or write **Standard Oil Company** (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

**Quick facts about**  
**RYKON Grease**

- Heat stable. At sustained high temperatures RYKON Grease remains soft and grease-like.
- Resistant to water-washing.
- Mechanically stable. Minimum change in consistency in service.
- Resistant to oxidation. Thickener acts as an inhibitor.
- Exceptional rust-preventive properties.









count to ten . . .  
and then  
**scream**



That shipment of high temperature alloys hits your receiving dock. Everything goes great. No production headaches. No kicks from the field. Your wife looks several years younger and the dog doesn't growl at you any more.

You reorder from the same company. Still no problems . . . except you can't stop smiling while you shave. All told, you get nine separate shipments from this source. You're beginning to think high temperature alloy problems are the fantasies of fools.

So you place order number ten. Same supplier. Same grade. Same everything . . . except *this* lot fails to get by the eagle eye of your inspector. You've got a real procurement problem. Schedules suffer. Now your wife looks twenty years older and the dog snaps at your heels and you would trade your favorite putter for a high temperature alloy you can count on.

Carpenter hasn't come up with a cure for all your woes, but we have perfected a revolutionary new steelmaking process which minimizes variations from lot to lot. Called the MEL-TROL<sup>®</sup> process, it features a patented mold which reduces segregation of harmful impurities during solidification of the ingot. Result: you get clean, sound, tough metal from surface to centerline . . . in every bar . . . every time you order.

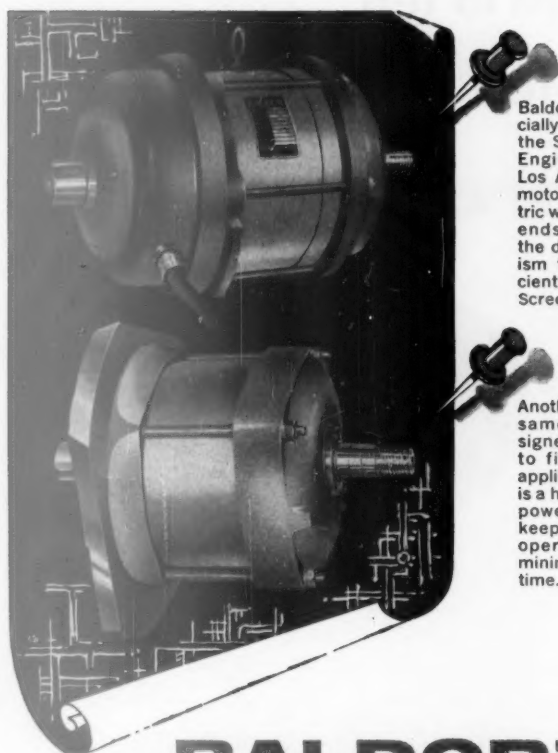
Now predictable performance is yours for the asking.

tool and die steels  
stainless steels  
**Carpenter steel**  
electronic, magnetic and electrical alloys  
high temperature alloys  
special-purpose steels  
tubing and pipe  
fine wire specialties



*The Carpenter Steel Company, Main Office and Mills, Reading, Pa.  
Alloy Tube Division, Union, N. J.  
Webb Wire Division, New Brunswick, N. J.  
Carpenter Steel of New England, Inc., Bridgeport, Conn.*





Baldor Motor specially-designed for the Southwestern Engineering Co., Los Angeles. This motor, with eccentric weight on both ends of shaft, is the drive mechanism for their efficient SWECO Vibro-Screen Separator.

Another version of same motor designed by Baldor to fit a specific application. Result is a highly efficient power-plant that keeps equipment operating with a minimum of down-time.

## Let **BALDOR'S** unique engineering service design the one right motor for your equipment!

To assure maximum efficiency from today's highly complex and precision-built equipment, more than just a standard-type motor is needed to supply the power. It has to be designed and engineered to fit the specific application—not just adapted to the equipment.

Baldor's staff of extremely competent engineers has played an important part in helping many original equipment manufacturers develop motors that are "tailor-made" for their particular requirements.

This outstanding design and engineering service is yours without delay or obligation. Contact your local Baldor representative or write direct.

Our 40th Year!

Available  
in  
Old  
and  
Rerated  
NEMA  
Frames!



4363 Duncan Ave. • St. Louis 10, Mo.

Over 500 Authorized Sales & Service Distributors in U. S. A.

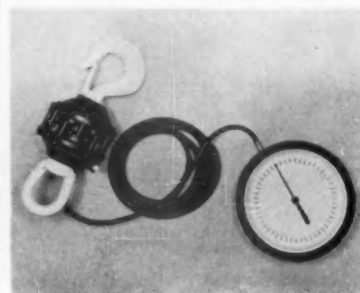
District Offices: Atlanta • Chicago • Cleveland • Dallas • Dayton  
Des Moines • Detroit • Litchfield, Conn. • Los Angeles • Milwaukee  
Minneapolis • New York • Kansas City, Mo. • Oakland • Philadelphia  
Portland, Ore. • Syracuse

For More Information Write No. 228 on Place Mark Card—Page 32

## Products

(Continued from page 138)

provided as separate units connected by up to 50 ft. of flexible double wire braid hose. Load element can be picked up by crane hook to any reasonable



height and indicator mounted at operator's eye level. Unit has high safety factor, automatic self-alignment under tension, 360 degree calibration and 25% tare adjustment on 12 in. dial. Scale is available in capacities from 1000 to 60,000 lbs. **Martin-Decker Corp., 3431 Cherry Ave., Long Beach 7, Calif.**

Write No. 32 on Place Mark Card—Page 32


## Ready-To-Use Inspection Materials

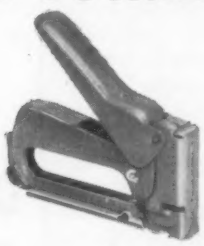



Magnetic particle inspection materials are now available in pressurized spray cans and plastic squeeze bottles. Materials can be used with any of the magnetic particle inspection equipment or tests kits already in use. Development makes tests faster and easier, eliminating bulky containers and such problems as mixing to formula or filling application devices. **Magnaflux Corp., Sub. of General Mills, 7300 W. Lawrence Ave., Chicago 31, Ill.**


Write No. 33 on Place Mark Card—Page 32



This Truarc retaining ring  on this

Swingline  staple gun has cut

assembly time by 60%  and saved

\$25.00  per thousand units.

Result: the end cost of the assembled product was substantially reduced.

**PURCHASING PROPOSITION:** Check the impact of your present fastening method on the end cost of your company's product. Then, let a Truarc Engineer demonstrate from the widest line of retaining rings anywhere. He can show you exactly how much Truarc Rings will *reduce* that end cost. Read about the impact of Truarc Rings on 70 different products (your own product may be there!) in our Catalog RR 10-58. For *immediate* action see your **Authorized Truarc Distributor**. He's as close as your Classified Telephone Directory. Look under: "Rings, Retaining."

C.14



**WALDES**

**TRUARC<sup>®</sup> RETAINING RINGS**

WALDES KOHINOOR, INC., 47-16 Austel Place, Long Island City 1, N. Y.

9 OUT OF 10 PRODUCTS CAN BE IMPROVED WITH TRUARC RETAINING RINGS

© 1960 WALDES KOHINOOR, INC.

For More Information Write No. 229 on Place Mark Card—Page 32

JUNE 20, 1960

143



## Products

### Handy Rivet Gun Permits Easy Assembly



A handy riveting gun permits the user to insert and crimp rivets from the same side, without having to get behind blind work surfaces. Gun can be used for almost all sheet metal and mechanical assemblies. It uses special rivets which cost only one-third as much as standard rivets and can be easily removed if necessary. Simple-to-handle riveting gun weighs only 1 lb. 7 oz. and can be easily operated with one hand. Its clinching action pulls parts together with up to 600 lbs. of force, and countersunk heads leave flush surface for easy finishing. **Richline Co., Inc., 1531 E. Franklin Ave., Minneapolis 4, Minn.**

Write No. 34 on Place Mark Card—Page 32

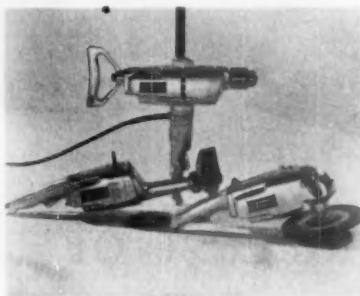
### Lamp Annunciators Stress Flexibility



Industrial lamp annunciators and annunciator systems in a new design stress modular construction and flexibility. Plug-in circuits can easily be removed and

changed for different operational sequences. Features include quick-change snap-in indicator plates, sequential circuits, data-logging terminals, and snap-fit one-piece molded lamp compartments that can be removed without any tools. Units monitor pressure, temperature, opening of circuit breakers, high or low liquid levels, power equipment failure, etc. Applications include supervision of machines and equipment in process control and automation systems. **Edwards Co., Inc., Norwalk, Conn.**  
Write No. 35 on Place Mark Card—Page 32

### Heavy Duty Lightweight Power Tools

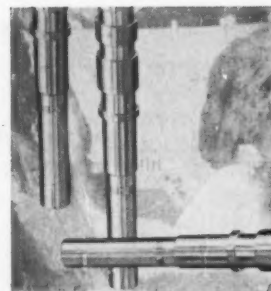


A line of sixteen portable power tools includes: ten heavy-duty drills, in a range of 1/2, 3/4, 1 and 1-1/4 in. sizes; three heavy-duty disc sanders in 7 and 9 in. sizes; a 7 in. polisher; and two grinders in 5 and 6 in. sizes. Tools are up to 35% lighter in weight and up to 100% more powerful. All have been designed to give more effortless operation through precision balance, better control, greater durability and lighter weight. **Stanley Electric Tools, Div. of the Stanley Works, 195 Lake St., New Britain, Conn.**

Write No. 36 on Place Mark Card—Page 32



"Guess what! I found a bunch of my old pay checks."



HOOVER DAM

## call WESTERN UNION operator 25

Your J&L stainless steel distributor can serve you better *because J&L serves him better*, backing him with the full facilities of J&L's Stainless and Strip Division.

Your J&L distributor can reduce your costs by providing a complete range of pre-production services, and doing it economically! He can save you the capital investment required to maintain long term inventories; he can help you eliminate the costs of overhead connected with stocking, accounting, and the inevitable losses incurred through waste and obsolescence due to specification changes.

Technical assistance in solving production problems is also available from your J&L distributor... when those problems are connected with an application using stainless steel, J&L's own staff of technical specialists will promptly answer your distributor's call for additional help.

Even when advanced research is required you can call on your J&L distributor in confidence. He will be happy to discuss your problem because he knows he is backed by one of the world's most respected teams of metallurgists—J&L's own staff in laboratories at Detroit and the famous Graham Research Laboratories at Pittsburgh.

Your J&L distributor is as near as your telephone. Call Western Union Operator 25 for the name of your J&L distributor of Consistent Quality stainless steel.

J&L — a leading producer of stainless steel and precision cold rolled strip steels

# J&L

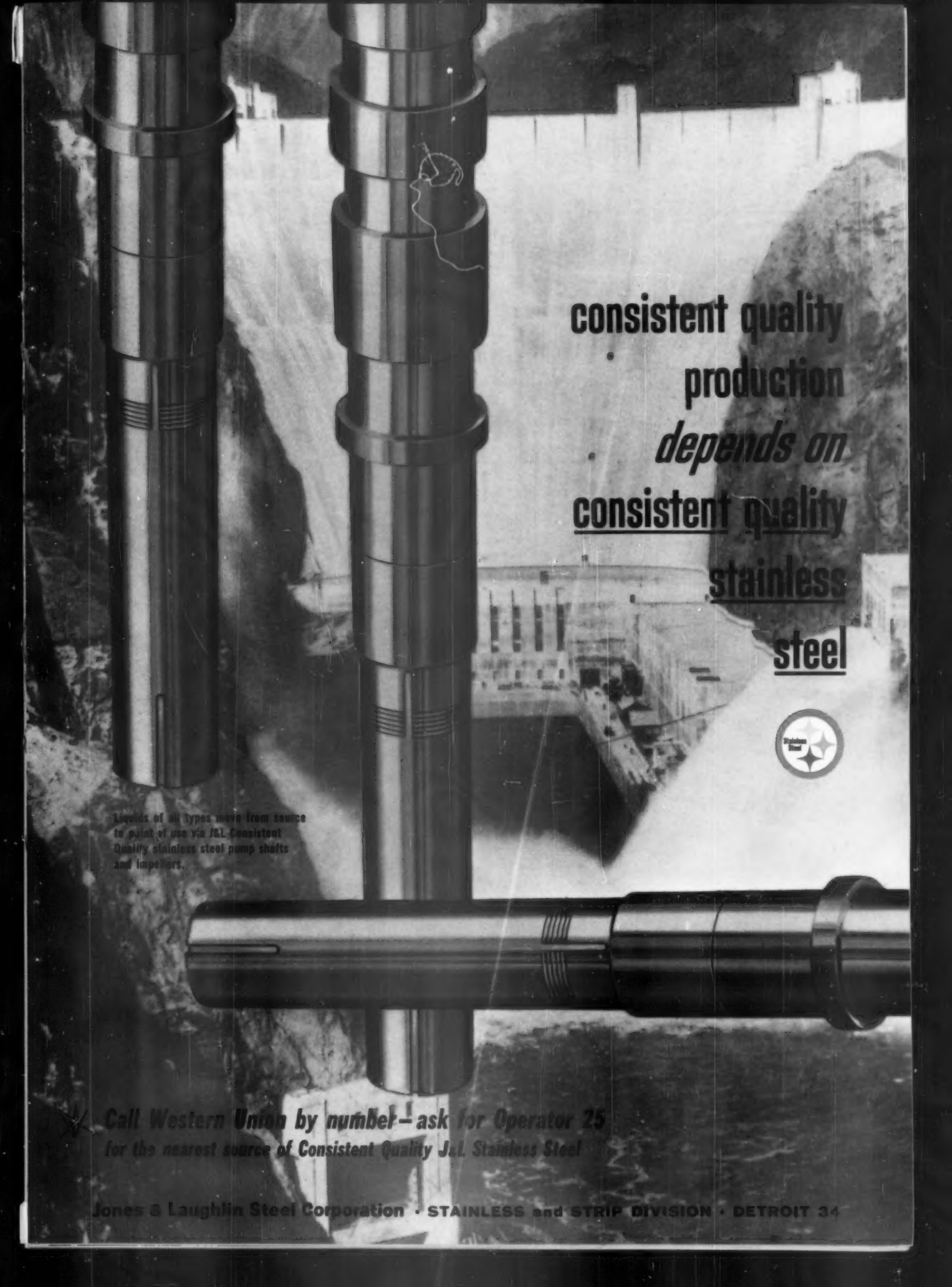
## STAINLESS

SHEET • STRIP • BAR • WIRE

For More Information Write No. 230 on Place Mark Card—Page 32

PURCHASING





consistent quality  
production  
*depends on*  
consistent quality  
stainless  
steel



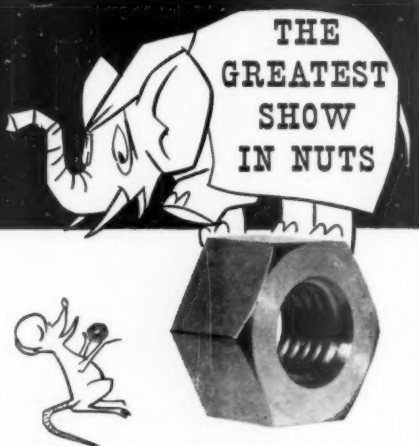
Liquids of all types move from source  
to point of use via J&L Consistent  
Quality stainless steel pump shafts  
and impellers.

★ **Call Western Union by number—ask for Operator 25**  
**for the nearest source of Consistent Quality J&L Stainless Steel**

**Jones & Laughlin Steel Corporation • STAINLESS and STRIP DIVISION • DETROIT 34**

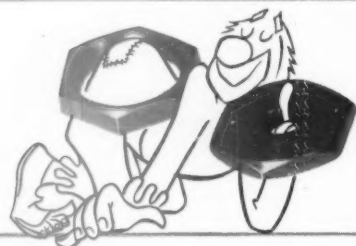


**Fischer**  
presents...



#### RANGE OF SIZES AND THREADS

Here you see the smallest and largest hex sizes produced by Fischer with the finest and coarsest standard threads. The miniature is  $\frac{1}{8}$ " x  $\frac{3}{64}$ " with 0-80 threads... jumbo is  $1\frac{1}{16}$ " x  $\frac{39}{64}$ " with  $\frac{5}{8}$ -11 threads.

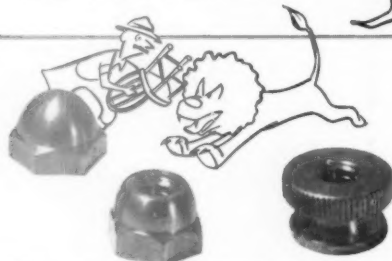
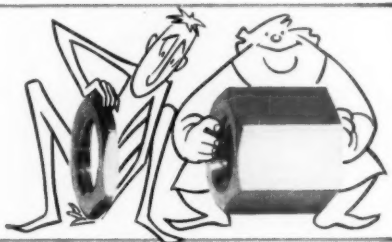


#### RANGE OF THREAD DIAMETERS

Turned from  $1\frac{3}{16}$ " hex stock, these nuts illustrate variation in I.D. obtainable in same blank size (depending on thread specified). One is  $1\frac{1}{16}$ " I.D., the other only  $\frac{1}{4}$ ".

#### RANGE OF LENGTHS

Both these nuts are  $\frac{5}{8}$ " O.D. with  $\frac{7}{16}$ " thread diameter. The husky one is  $\frac{5}{8}$ " long, the other  $\frac{3}{8}$ ". In specific nut sizes, maximum length is determined by thread pitch and thread I.D.



#### RANGE OF STANDARD TYPES

In addition to hexagon nuts, Fischer also supplies cap (acorn), open-end cap, knurled thumb, battery and fixture nuts in a range of sizes with standard/special threads.

#### ODD SIZES, SHAPES & THREADS

... are another specialty with Fischer. In fact, we have produced more than 3400 different types of non-standard brass and aluminum nuts. What do you need?



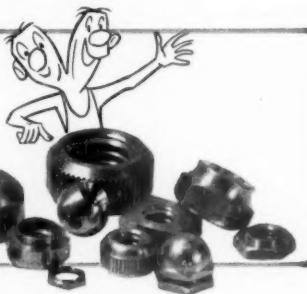
there's no premium for precision at

**Fischer**

FISCHER SPECIAL MFG. CO.

471 MORGAN STREET • CINCINNATI 6, O.

For More Information Write No. 231 on Place Mark Card—Page 32



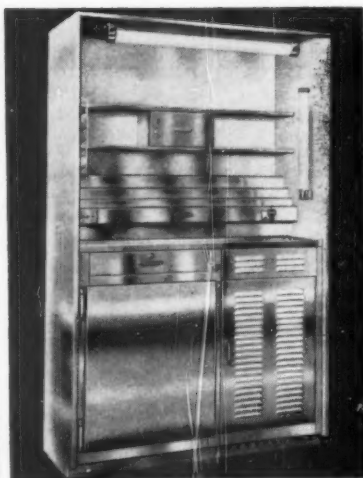
FISCHER IS THE LEADING PRODUCERS OF PRECISION TURNED BRASS AND ALUMINUM NUTS... TO YOUR SPECIFICATIONS!

Whatever your requirement, Fischer can assure you of premium quality and prompt "on schedule" deliveries at competitive prices. WRITE FOR CATALOG FS-1000.

8002-FS

## Products

### One-Stop Unit for First Aid Rooms



A one-stop medicine station is designed for installation in first aid rooms of industrial plants. Attractive stainless steel unit is compact and easy-to-clean, either 48 or 60 in. wide by 20 in. deep by 80 in. high. Inside is roomy 4 cu. ft. refrigerator, sink, water faucet, easy-to-see tiered shelves, double-lock narcotic cabinet and many other features that save time in storing, preparing and dispensing medications. **General Scientific Equipment Co., Limekiln Pike and Williams Ave., Philadelphia 50, Pa.**

Write No. 37 on Place Mark Card—Page 32

### High Purity Soft Solder Alloy Preforms

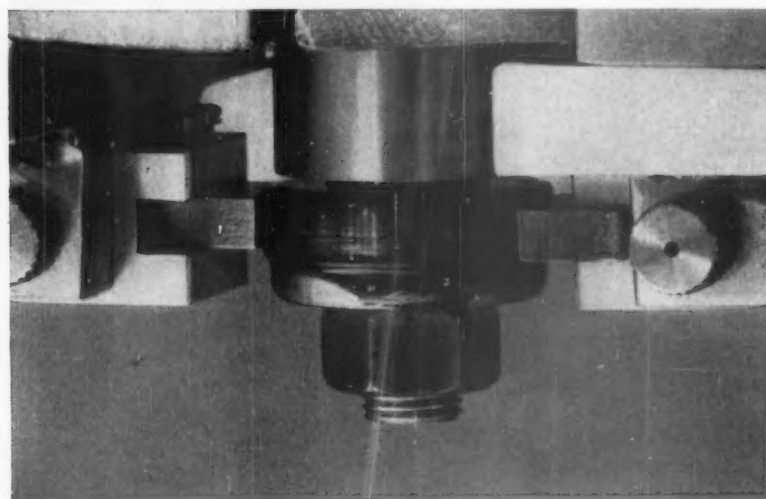
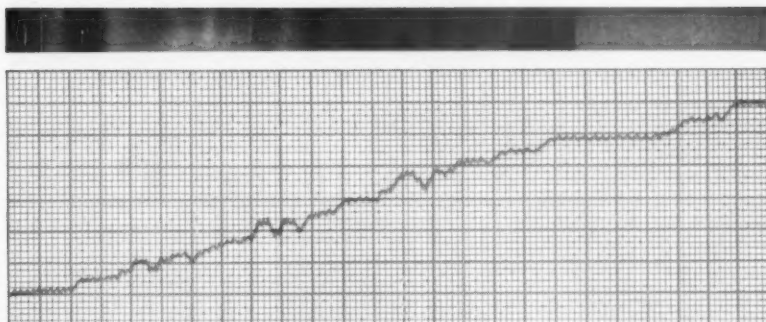


New vacuum casting techniques are producing high purity soft solder preforms, meeting the need of electronics and other industry. (Please turn to page 150)

PURCHASING



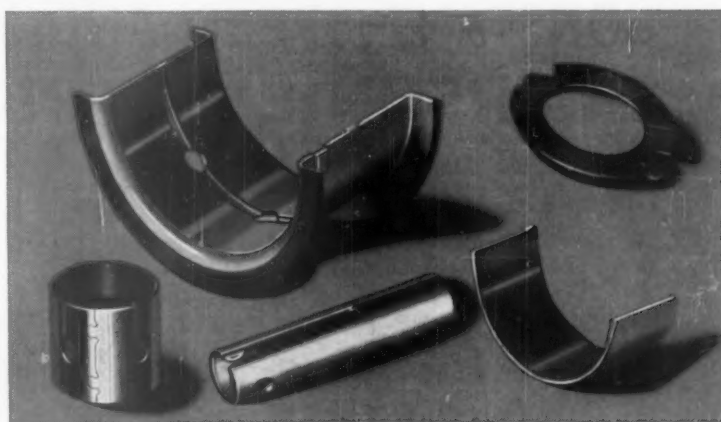
# WE TAKE THE PULSE OF BEARINGS ON TAPE TO MAKE THEM EVEN BETTER!



**TO TAPE-RECORD THE "HEARTBEAT" OF BEARING METALS UNDER LOAD, WE USE THIS SPECIAL FRICTION AND WEAR TESTER.** (left) The result is highly accurate data on the behavior of bearing-metal surfaces, invaluable in our fundamental research into friction. By means of this instrument, we're able to correlate, more closely than ever before, specific alloy compositions with their degree of the "stick-slip" phenomenon (in which one surface sliding over another slides . . . stops . . . slides . . . stops . . . and so on) which accompanies unlubricated sliding action. We can also determine accurately the compatibility of bearing materials with shaft metals in lubricated systems . . . showing us which metal or alloy is most likely to be superior for a given bearing application. In short, this Friction Tester is a fundamental research tool which gives us positive answers to difficult bearing problems, faster than ever before.

## ONE REASON WHY F-M SLEEVE BEARINGS

and other F-M products give you the finest possible performance — this and the other unusual precision equipment used by Federal-Mogul research. You'll find F-M sleeve bearings used in turbines, engines, and countless other types of power transmission equipment . . . F-M precision thrust washers in pumps, automotive engines and transmissions, motors . . . F-M formed bushings in refrigeration compressors, electric motors . . . and low-cost F-M spacers in motor mounts, machinery, control mechanisms. These are just a few examples.



There's much valuable data in our Design Guides on sleeve bearings, thrust washers, and bushings, and in our brochure on spacers. For your copies, write Federal-Mogul Division, Federal-Mogul-Bower Bearings, Inc., 11077 Shoemaker, Detroit 13, Michigan.

# FEDERAL-MOGUL

sleeve bearings  
bushings-spacers  
thrust washers

DIVISION OF  
FEDERAL-MOGUL-BOWER  
BEARINGS, INC.





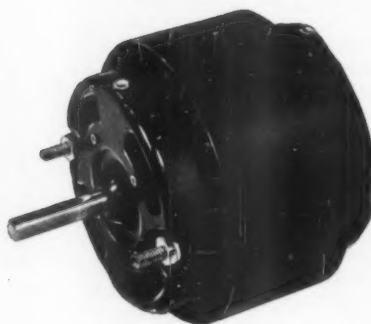
**WHAT'S  
IN IT  
FOR  
YOU!**

## CONSTANT SPEED AND TORQUE OF **EMERSON ELECTRIC MOTORS**

is assured by balanced  
Die-Cast Rotors

The precision tolerances of the rotors in Emerson Electric Motors insure a uniform air gap for constant speed and torque. Noise and vibration are kept to a minimum by the symmetrical rotor design that provides a porous-free casting. The rotor is supported on each side to decrease the bearing load and give your application long, trouble-free operation.

EMERSON ELECTRIC MOTORS are custom engineered to suit your specific needs. Call us *today*—you'll like our way of doing business!



**EMERSON ELECTRIC** of St. Louis • Since 1890  
DEPT. M-15, 8100 FLORISSANT • ST. LOUIS 36, MO. • CO 1-1800

For More Information Write No. 233 on Place Mark Card—Page 32





## TOMORROW'S "DREAM" IS OUR JOB TODAY

There's more to the car of tomorrow than just futuristic styling! Automotive engineers are working constantly to perfect completely new power plants—like turbine engines—to achieve yet unheard of performance and economy! And they demand bearings that are as advanced as their thinking. This is no new challenge to Bower engineers. Their many original contribu-

tions have helped increase performance and reduce bearing failure to a minimum. If your product is one which requires advanced bearings today plus realistic planning for the future, call Bower. There's a complete line of tapered, straight, or journal roller bearings for every field of transportation and industry. Bower Roller Bearing Division, Detroit 14, Michigan.

**BOWER**  
ROLLER BEARINGS

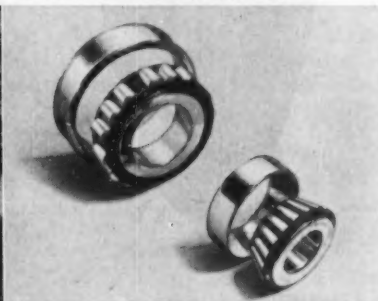
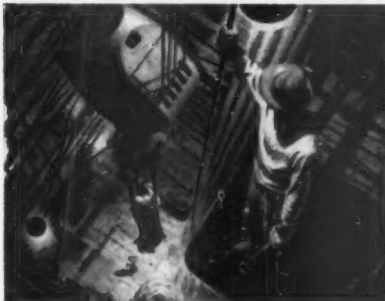
tapered  
cylindrical  
journal

DIVISION OF  
FEDERAL-MOGUL-BOWER  
BEARINGS, INC.

'ROUND-THE-CLOCK DEPENDABILITY is one reason why the petroleum industry specifies Bower roller bearings.

LEADING HEAVY EQUIPMENT MANUFACTURERS use Bower roller bearings—for long, efficient life under punishing loads.

REDUCE BEARING MAINTENANCE—Use Bower tapered and cylindrical roller bearings for your application.





## HOW A "BROKEN ARM" WAS CURED . . .



### PHOSPHOR BRONZE

**Problem:** How to form the intricate bend in this contact arm—without fracturing—and still use a spring temper material with good properties of resiliency. This was the problem that faced a precision stamper\* in producing the arm for a leading manufacturer of electrical equipment.

Each alloy tried was subject to fracture . . . until Miller came along with 200-PLUS Phosphor Bronze, a spring temper alloy with a forming ability that permitted the most exacting bend—without fracturing—and with qualities of resiliency that actually exceeded the requirements of the job.

**Result:** The fracturing problem was licked . . . the supplier was able to improve on the part specifications . . . not a single tooling change was necessary.

\*Name and case history on request

...

Sound like one of your problems? The chances are good that Miller specialists can help you solve it—with either a standard alloy or one specially tailored to your requirements. Contact your Miller man.

WRITE FOR FREE CATALOG



### ROLLING MILL DIVISION

THE MILLER COMPANY  
MERIDEN, CONN.

Approximately 1 1/2 actual size

...WHERE PHOSPHOR BRONZE IS THE MAIN LINE—NOT A SIDELINE  
For More Information Write No. 235 on Place Mark Card—Page 32

## Products

*(Continued from page 146)*

tries for ultra-pure solder materials. Alloying elements are held to 99.999% purity, assuring consistent flow characteristics and joint strength. Complete range of soft solder preforms are available, with melting joints from 361 degrees F to 689 degrees F. Preforms are produced in form of flat washers, discs, etc., and are packaged in argon or other protective atmospheres for continued purity. **Accurate Specialties Co., Inc., 37-11 57th St., Woodside 77, N. Y.**

Write No. 38 on Place Mark Card—Page 32

### Belt and Disc Finishing Machine



A combination belt and disc finishing machine is capable of performing 90% of all shop finishing operations. Unit which has standard 4 in. abrasive belt and 12 in. abrasive disc is excellent for grinding, surfacing or polishing steel components, die castings, aluminum, brass and copper parts and can also handle finishing operations on wood and plastic. Machine is particularly applicable for sharpening tools. Finely machined disc is balanced for vibration-free operation, assuring accurate finishing on close-tolerance pattern-making operation. **Walker-Turner Div., Rockwell Mfg. Co., 400 N. Lexington Ave., Pittsburgh 8, Pa.**  
Write No. 39 on Place Mark Card—Page 32

### Cold-Cleaning Solvent More Easily Reclaimed

A chlorinated cold-cleaning solvent can be used repeatedly through reclamation in standard  
*(Please turn to page 157)*



**AT BCA** *everything's new but the name*



## **RARE SAND PROVES BEARING DESIGN** in new 100,000-mile test!

The automotive shaft bearing above has just completed the equivalent of 100,000 miles of dusty backroads travel. For hours, it's been alternately spun and stopped in this special mud . . . mud composed principally of a rare type of Arizona sand, so fine it penetrates almost anywhere water can go.

The particles of this unique sand are so small that, mixed with water, even filtering won't remove them all. They're highly abrasive, too—so much so that bearing failure quickly occurs whenever particles penetrate into a bearing raceway. Though several score of spin-and-rest cycles in this bath are equal to 100,000 miles of heavy-duty use on the road, the BCA bearings tested on this machine consistently stand up under many more cycles, before failure from sand penetration.

This test is typical of the many being conducted in BCA's new testing laboratories for BCA customers. Here, and in the expanded research laboratories, testing of bearings to exceed customer specifications is a daily occurrence. Often test equipment is specially built to exactly duplicate equipment in the customer's plant.

BCA provides a wide range of ball bearing sizes and types for nearly every kind of industry. This, plus extensive new research, testing, and precision production facilities make BCA a dependable source of long-life bearings. For information, write Bearings Company of America, Division of Federal-Mogul-Bower Bearings, Inc., Lancaster, Pennsylvania.



**BEARINGS COMPANY  
OF AMERICA**

ball  
bearings

DIVISION OF  
FEDERAL-MOGUL-BOWER  
BEARINGS, INC.

For More Information Write No. 236 on Place Mark Card—Page 32

For More Information about ad on following page  
Write No. 237 on Place Mark Card—pg. 32→

JUNE 20, 1960

151





C. V. Gregory, General Sales Manager, Reliance Electric and Engineering Co.

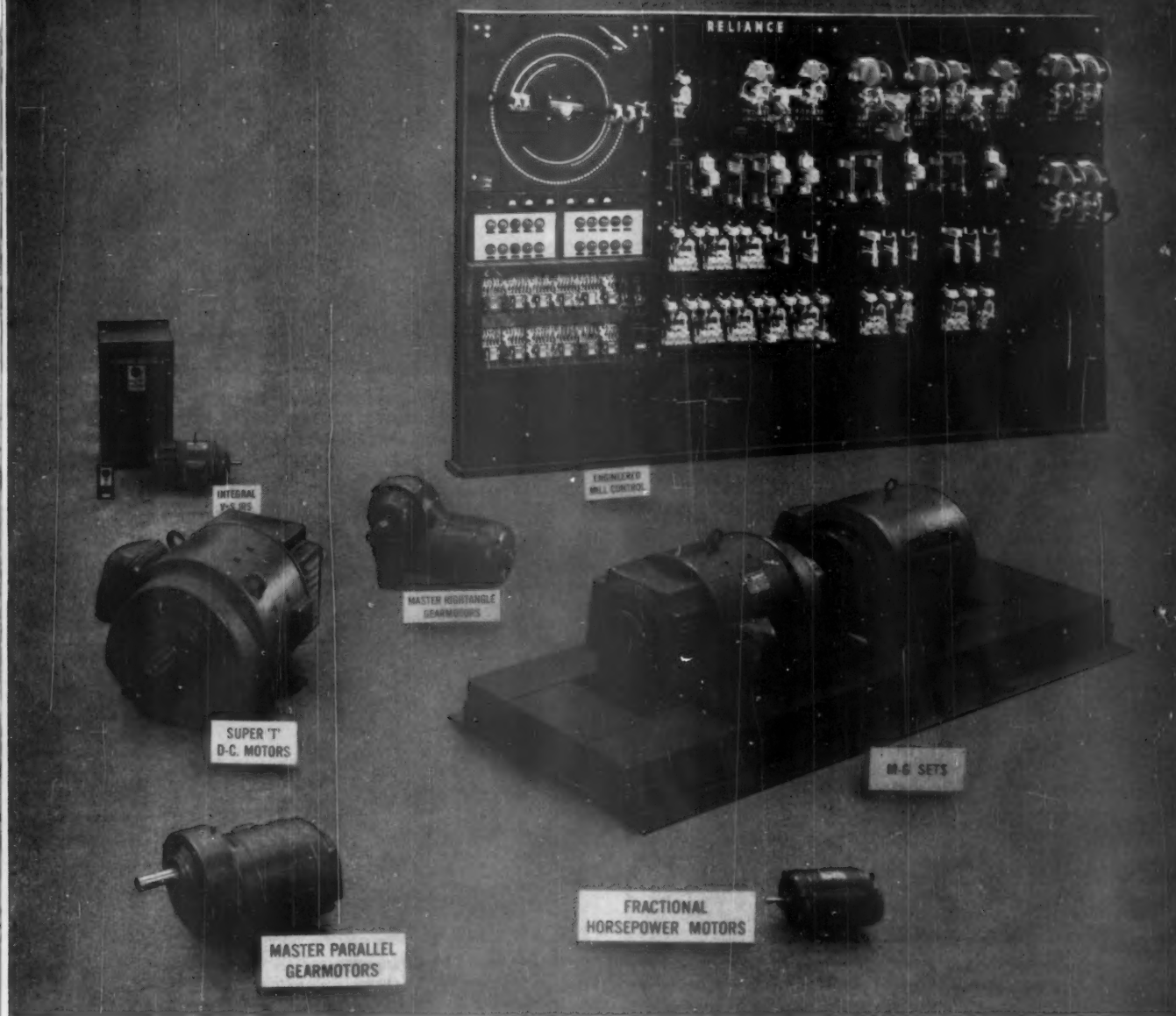
## Pinpoint the *exact* drive for your

C. V. Gregory makes sure you get that exact drive. His Reliance Sales Engineers provide the application experience to make it easy for you to select from this full line of mechanical and electrical drives . . .  $\frac{1}{8}$  to 1,000 horsepower.

From silo unloaders and barn cleaners to the most completely automated industrial machinery, Reliance motors and drive systems provide just the right motive power.

Get proof of Reliance's sound product engineering and performance. Talk to a Reliance Sales Engineer. There is an office near you. Check the Yellow Pages or write for Catalog A-100 showing the Reliance full line.





A-1607

# machine from Reliance's full line

Product of the combined resources of Reliance Electric and Engineering Company and its Master and Reeves Divisions

**RELIANCE ELECTRIC AND ENGINEERING CO.**

DEPT 256A, CLEVELAND 17, OHIO

Canadian Division: Toronto, Ontario  
Sales Offices and Distributors in Principal Cities



Duty Master A-c. Motors, Master Gearmotors, Reeves Drives, V-S Drives, Super 'T' D-c. Motors, Generators, Controls and Engineered Drive Systems.

Gentlemen:

Please send me a copy of your new catalog A-100.

Name

Title

Company

Address

City and State

A-1607-A

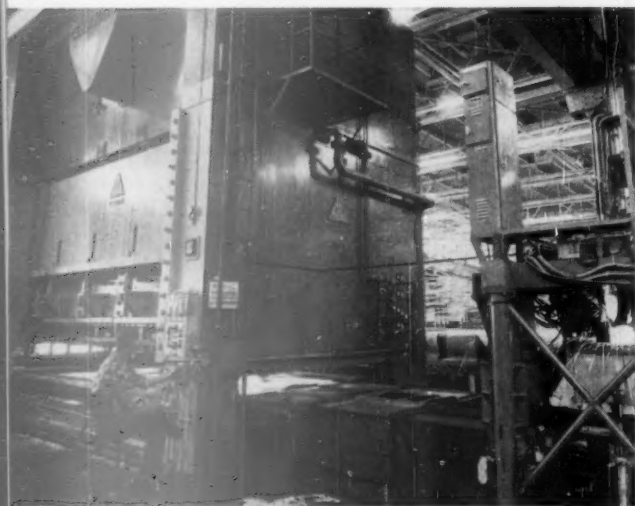




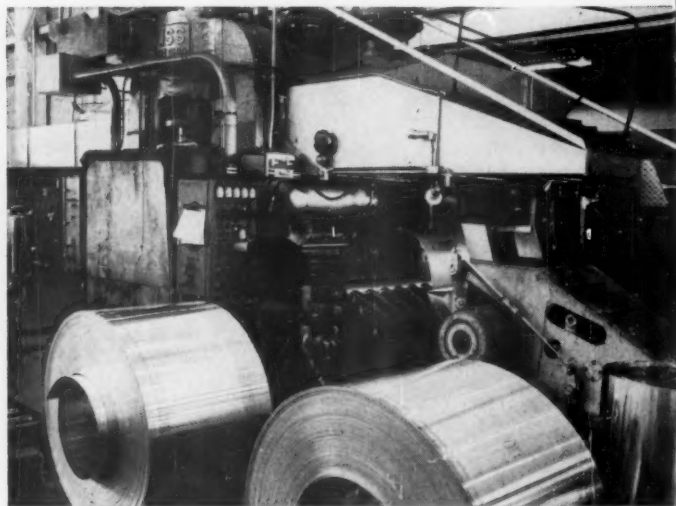
Extensive use of versatile Gulf Harmony oil in this electric range plant made possible a big reduction in the number of oils used. Shown in foreground is the hydraulic system where Gulf Harmony is used as hydraulic medium.



In steel mills, Gulfcrown Grease E.P. cuts maintenance costs because of its ability to withstand high temperatures and extreme pressure. Here Gulfcrown Grease E.P. is used in the lubrication of work rolls and table rolls.



Gulfcrown Grease, a Gulf E.P. Lubricant and Gulf Harmony oil keep downtime to a minimum on this 850-ton press. It turns out electric range bodies (flat) at the rate of 300 an hour.



Gear drives in this aluminum rolling mill are assured longer service life with Gulf E.P. Lubricants. In the mill's hydraulic system, Gulf Harmony oil's resistance to oxidation and rust preventive properties cut maintenance costs.

**Gulf® multi-purpose greases and oils simplify lubrication,**

# GULF MAKES THINGS

At a large electric range plant, a Gulf Engineer set up a simplified lubrication program. As a result, the number of oils and greases was reduced from dozens down to only 6. Now, 3 oilers service the entire production line with its thousands of lubrication points.

A rubber hose manufacturing plant has been following a Gulf-planned lubrication program for the past 10 years. Downtime has been reduced more than 30% on 300 basic processing machines and hundreds of auxiliary units, using only 6 Gulf greases and 3 Gulf oils.

And so it goes. In plant after plant, Gulf has set up simplified lubrication programs that have helped to solve

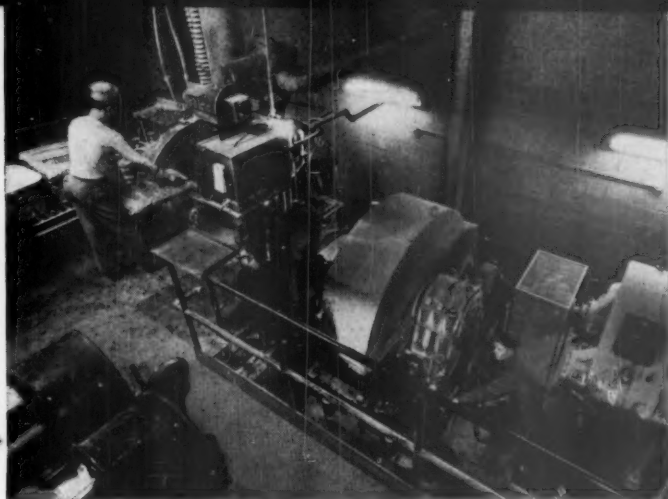
complex lubrication problems and reduce costs with only a few basic oils and greases. The most versatile of these outstanding multi-purpose Gulf lubricants are:

**Gulf Harmony® oil**—ideal for hydraulic systems, air compressors, blowers, dryer-roll bearings, machine tools, electric motors, central circulating systems, and many other applications.

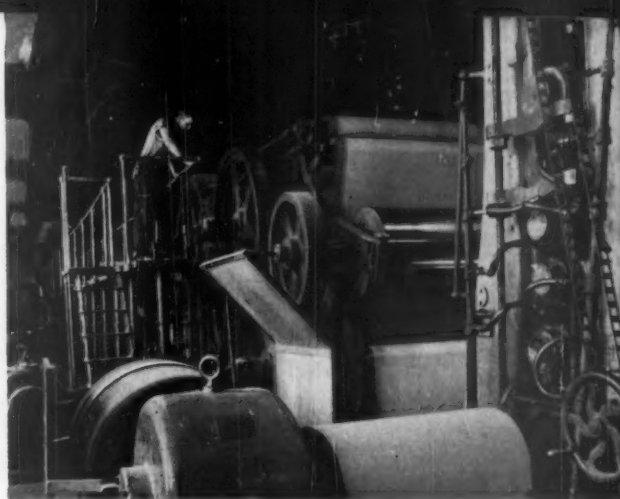
**Gulfcrown® Grease**—a general-purpose lubricant for virtually any application where extreme pressure characteristics are not required.

**Gulfcrown® Grease E.P.**—a superior lithium-base

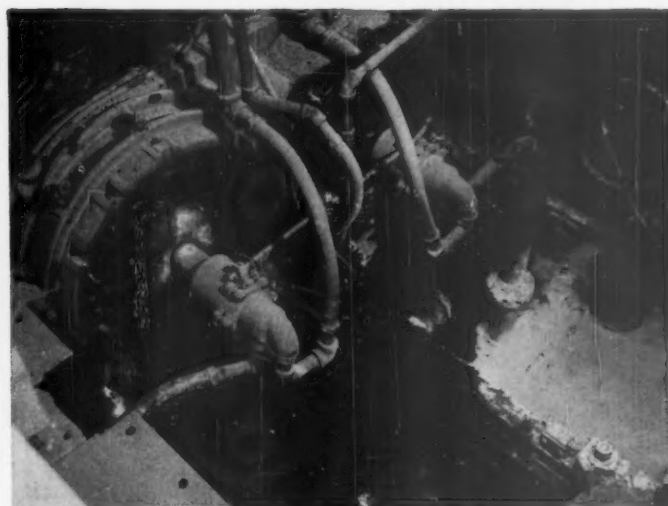




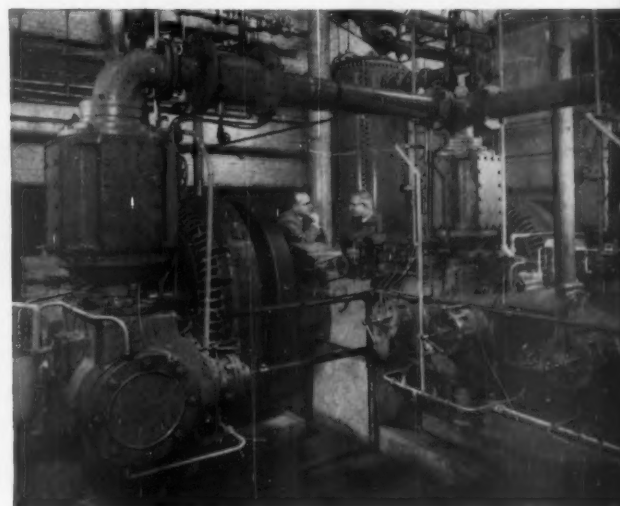
Gulf lubricants helped cut downtime more than 30% in this rubber hose plant. With Gulfcrown Grease and Gulf Harmony oil, this spiral flow mixer hasn't had a mechanical breakdown in 10 years due to a lubrication problem.



Using Gulf Harmony oil and Gulfcrown Grease for critical bearing lubrication, this paper mill has logged 15,000 hours without downtime due to lubrication. At the same time, lube inventories were reduced from 39 types to 13.



Heavy bearing loads exist in these main bearings of a Banbury Mixer. Gulfcrown Grease E.P., a superior lithium-base grease, lubricates here with high mechanical stability which resists costly breakdowns.



Compressor units like these are protected against premature wear and excessive maintenance costs when lubricated with Gulf Harmony oil. Units are also assured longer life and are kept free from harmful sludge deposits.

**cut costs . . .**

# RUN BETTER!

grease specially developed for use where heavy bearing and gear loads exist . . . where shock loads may occur . . . where machine element action is oscillating.

**Gulf® E.P. Lubricants**—a group of gear-drive lubricants with superior film strength. In many cases, one grade of lower viscosity can do the job of several mineral oils of higher viscosities.

Perhaps these versatile Gulf lubricants can help cut maintenance costs and simplify lubricant storage and handling in your plant. Just call a Gulf Sales Engineer at your nearest Gulf office. Or, write for product literature.

**GULF OIL CORPORATION**  
Department DM, Gulf Building  
Pittsburgh 30, Pa.







# HERE'S! PROOF!

THE GREATEST NAMES IN  
INDUSTRY ARE USING  
ALUMINUM BEARINGS  
IN THE TOUGHEST  
APPLICATIONS

## COMPANIES

Anderson, Inc.  
Bendix Products Div.,  
Bendix Aviation Corp.  
Boeing Airplane Co.  
Bucyrus Erie Co.  
Caterpillar Tractor Co.  
Clark Bros. Co.  
Clark Equipment Co.  
Clearing, Division of  
U. S. Industries, Inc.  
Cleveland Crane & Engineering Co.  
Cooper-Bessemer Corp.  
John Deere  
Diamond Alkali Co.  
Fairbanks-Morse Co.

Hardinge Company, Inc.  
Ingersoll-Rand Co.  
Manning, Maxwell and Moore, Inc.  
Marion Power Shovel Co.  
McCulloch Corporation  
Morgan Construction Co.  
Nordberg Mfg. Co.  
Northern Engineering Co.  
Pesco Div., Borg-Warner  
Schramm, Inc.  
Waukesha Motor Co.  
S. S. White Dental Mfg. Co.  
Worthington Corp.  
York Process Equipment Corp.

... and there are many, many others!

For information on aluminum bearings see  
your bearing manufacturer, or write Aluminum  
Company of America, 1841-F Alcoa Building,  
Pittsburgh 19, Pa. For aluminum bearing stock,  
see your nearest Bunting Distributor.

World-wide sales through Alcoa International, Inc.  
230 Park Avenue, New York 17, N. Y.

## APPLICATIONS for bearings and bushings:

- |                                      |                        |
|--------------------------------------|------------------------|
| • aircraft landing gear              | • track rollers        |
| • turbines                           | • gear reduction units |
| • cranes                             | • lathes               |
| • hydraulic pumps                    | • starting engines     |
| • air-conditioning<br>equipment      | • power shovels        |
| • diesel engines                     | • superchargers        |
| • railroad car journals              | • rolling mills        |
| • compressors                        | • aircraft engines     |
| • combination<br>engines-compressors | • aircraft controls    |
| • forming presses                    | • milling machines     |
| • stationary engines                 | • automobile engines   |
| • marine engines                     | • grinding mills       |



## ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA



## Products

(Continued from page 150)

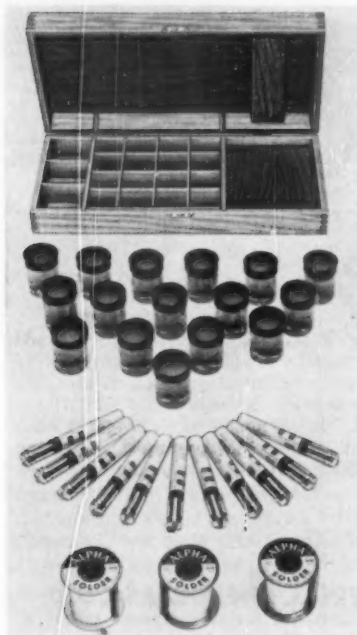
distillation units. Greater resistance of solvent to decomposition makes reclamation easier without need for either stainless steel or Heresite-lined equipment. It



quickly and thoroughly removes grease, oils, tars, waxes and other lubricating compounds. Advantages include ease of use—by dip, bucket, spray and wipe methods—greater safety, low corrosion and fact that it leaves little or no residue. **Dow Chemical Co., Midland, Mich.**

Write No. 40 on Place Mark Card—Page 32

## Solder and Flux Research Kit



A solder and flux kit helps design and process engineers do experimental pre-production jobs

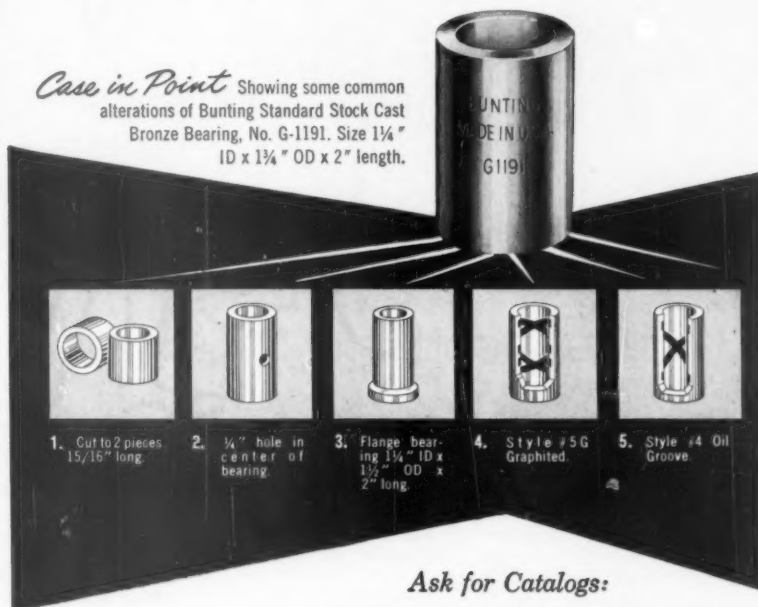
(Please turn to page 162)

# BUNTING® BEARINGS

**Bunting** local machine shop service solves many critical problems

One, or small lots of specially designed bearings, not obtainable from stock, can now be procured immediately through your Bunting Distributor. Fully equipped machine shops in Bunting Branches are at your service for emergency and experimental needs. The wide range of sizes of Bunting stock cast bronze and sintered bronze bearings makes *easy* the alteration of a stock to a special bearing at low cost. Bunting Cast or Sintered Bronze and Bunting Bearing Aluminum Bars provide the material for special sizes and designs which cannot be made from stock bearings. Your local Bunting Distributor can arrange for such work.

*Case in Point* Showing some common alterations of Bunting Standard Stock Cast Bronze Bearing, No. G-1191. Size 1 1/4" ID x 1 1/4" OD x 2" length.



1. Cut to 2 pieces 15/16" long.
2. 1/4" hole in center of bearing.
3. Flange bearing 1 1/4" ID x 1 1/2" OD x 2" long.
4. Style #5G Graphited.
5. Style #4 Oil Groove.

*Ask for Catalogs:*

**No. 158**—Complete listing of sizes of Bunting Cast Bronze and Sintered Bronze Bearings and Bars and Bunting Bearing Aluminum Bars. Pocket size edition.

**No. 258**—Complete listing of Cast Bronze Electric Motor Bearings for all makes and sizes of electric motors.

**No. 46**—Technology of Bunting Bearing Aluminum. A technical treatise on the composition, machining and use of this new bearing metal. Ask your local Bunting Distributor.

**THE BUNTING Brass and Bronze Company**

TOLEDO 1, OHIO • BRANCHES IN PRINCIPAL CITIES

BEARINGS, BUSHINGS, BARS & SPECIAL PARTS OF CAST BRONZE, SINTERED METALS OR ALUMINUM ALLOYS

For More Information Write No. 240 on Place Mark Card—Page 32



# HOW THE P.A. TOOK THE PRODUCTION MANAGER OFF THE HOOK



**CHLORINE INVENTORY was the problem!** Excessive downtime put production of chlorine derivative behind schedule. Starting up a second unit could make up loss. But the production manager (P.M.) hadn't foreseen need and there wasn't enough chlorine on hand. Sales Department was pushing P.M. hard.

**WHAT THE PURCHASING AGENT DID:** Contacted U.S.I. chlorine salesman by phone, explained situation.

#### RESULTS:

- ① Chlorine tank car arrived next morning.
- ② P.M. off hook.
- ③ P.M. bought P.A. cigar.

You can help production out of tight spots, too, when

you buy from U.S.I. The U.S.I. salesman understands your problems. Backed up by modern plants, nationwide shipping points and sales-oriented production men, he can handle day-to-day service—or emergency situations. You get rapid, dependable deliveries of chlorine, caustic soda, alcohol, ether, sulfuric acid, ammonia, nitrogen solutions, sodium, and other U.S.I. chemicals.

**U.S.I. INDUSTRIAL CHEMICALS CO.**  
 Division of National Distillers and Chemical Corp.  
 99 Park Ave., New York 16, N. Y.  
 Branches in principal cities

CHLORINE • CAUSTIC SODA • ETHYL ALCOHOL • ETHER • SODIUM • SULFURIC ACID • AMMONIA

For More Information Write No. 241 on Place Mark Card—Page 32



# ALLIS-CHALMERS



POXEAL insulation in this SUPER-SEAL motor needs no bake-out after floods.

Here's an open motor that shrugs off flood damage! Proof of

## O.E.M. pathy\*

**\*O.E.M. pathy . . . a unique form of empathy . . . the sensitivity to understand and to react to the problems of Original Equipment Manufacturers.** Because we are an OEM ourselves, we have this sensitivity. It means, "We give what we'd like to receive."

In terms of research, O.E.M. pathy results in unusually good components . . . like the motor shown above. It produces components that improve your product's performance and salability, saves time and re-

duces service needs. O.E.M. pathy also means regional stocking near your plant, complete product lines and competent service of national scope.

It's more than a desire to serve. It's the proven ability to serve you as an OEM. At Allis-Chalmers, we want your components business. We'll work to get it and we'll work to keep it. **Allis-Chalmers, Industrial Equipment Division, Milwaukee 1, Wisconsin.**

A-1340

Poxeal and Super-Seal are Allis-Chalmers trademarks.



For More Information Write No. 242 on Place Mark Card—Page 32



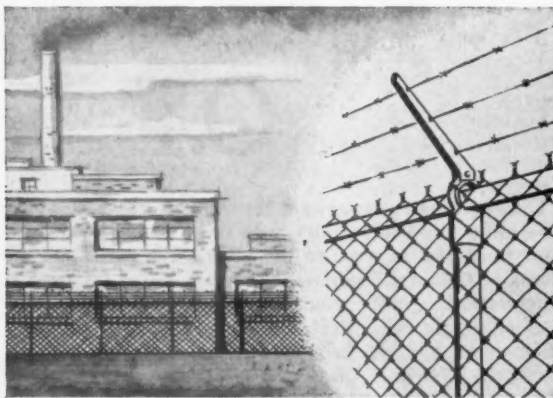


**STEEL PLATES AND PLATE PRODUCTS:** CF&I's Claymont plant is a leading producer of steel plates and plate products, like the 35,109-pound stainless-clad plate assembly for the huge vacuum column shown above. Claymont's steel plates are made to ASTM and AISI specifications in carbon, stainless-clad and

alloy steels. Where weight saving is important, Claymont can supply Clay-Loy® High Strength Low Alloy steel plate. We also spin or press plates into heads of various shapes and metals, in diameters up to 19 feet. Our Fabricated Steel Plate Shop makes specialty plate products to your particular specifications.



**WIRE ROPE:** CF&I-WICKWIRE has developed a superior wire rope — Double Gray®-X — with extra-high breaking strength plus longer life. In a new wire drawing process molybdenum disulphide builds a permanent molecular shield around each wire. Result . . . friction-free interaction of the individual wires in every Double Gray-X strand, smoother wire surface, greater toughness . . . longer wire rope life.



**REALOCK CHAIN LINK FENCE:** This strong, attractive fence is a one-time investment for long-lasting protection of plants and properties. Sturdy steel fabric is heavily galvanized after weaving for permanent resistance to all corrosive elements. Available in heights up to 13 feet, with or without barbed wire topping. A Realock representative will gladly help you select the right fence for your needs.



# Which of these quality steel products do you need yesterday?

CF&I can't do the impossible... but we try. It is our aim to match the quality of our service with the quality of our steel products, as symbolized by our Corporate Image. To do this, we have 40 modern warehouses across the country. There is one near you, ready to supply you with a variety of industrial steel products.

And on those steel products which are custom made to *your specifications*, our up-to-date production facilities also assure swift completion of your order. The next time you need any of the steel products shown here, find out for yourself why *it's a pleasure to do business with CF&I*. Just call our nearest sales office.

For complete information on these or any other CF&I Steel Products, ask for our "Principal Products Catalog G-50".



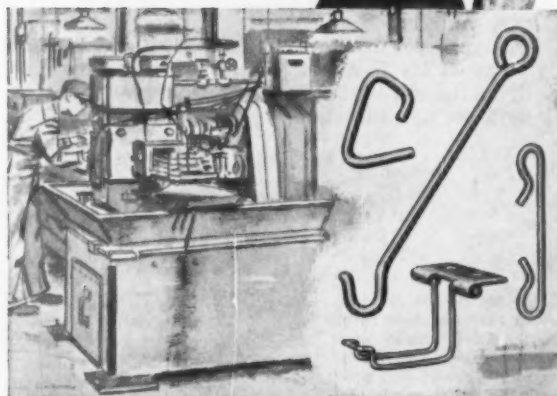
**THE COLORADO FUEL AND IRON CORPORATION**  
DENVER • OAKLAND • NEW YORK



2478



**SLINGS:** CF&I-Wickwire provides a complete line of safe wire rope slings, assemblies, fittings. The new "Swing Sling" is made of high-strength aircraft cables covered with tough, wide-bearing neoprene blocks that grip a surface gently but lift firmly. These blocks prevent costly surface damage. Designed for either choker or basket hitches, the "Swing Sling" comes in six industrial models.

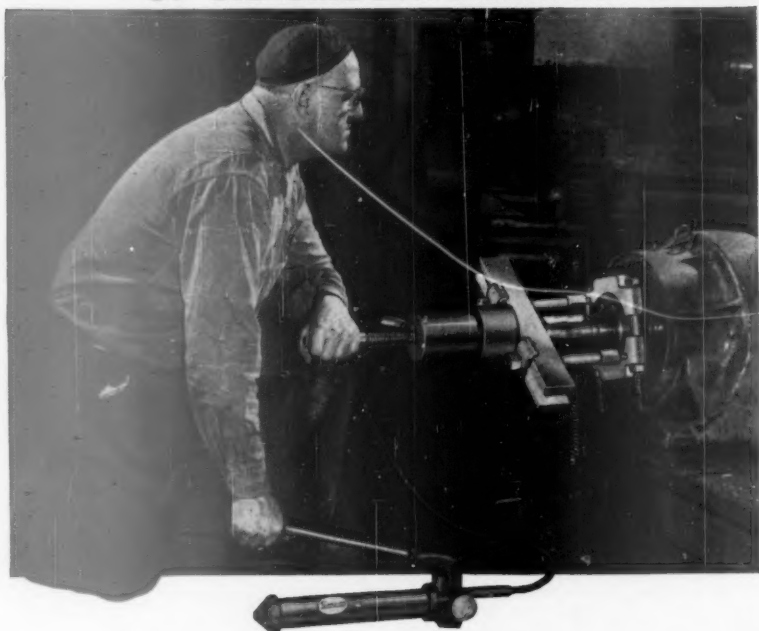


**FORMED WIRES:** CF&I-Wickwire manufactures an almost infinite variety of formed wires—in all sizes, shapes and designs—for all industrial uses. CF&I Formed Wires are made from many types of steel and may be coppered, tinned or galvanized before forming. CF&I engineers will help you design any type of wire form or spring to meet your specialized needs.



# 20 tons

## OF OIL-SMOOTH PULLING POWER



### NEW *Snap-on* Hydraulic Puller saves downtime, cuts costs

The new SNAP-ON 20-ton hydraulic puller handles hundreds of pushing, pulling and pressing jobs quickly and safely. No more galled shafts — no more damaged parts through heating, prying or hammering. Even the tightest pressed fits are off with a few easy strokes of the handle — downtime can be cut from hours to minutes.

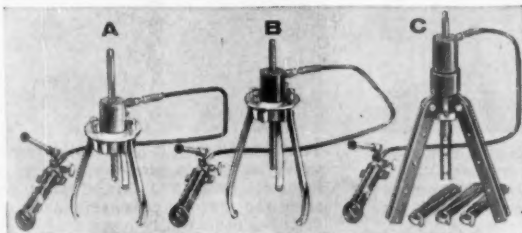
Hydraulic ram is threaded near the top for attachment of various yokes and adaptors for different jobs. Ram and adaptor can be used on the outside of a puller yoke. This is an exclusive feature and provides 6-in. longer reach than competitive units.

Another important feature is the accumulator sack on the pump. It permits operating pump in any position, eliminates back pressure and keeps oil free from contamination.

Ram and pump assembly is available separately or with your choice of a wide range of pullers — combination 2- and 3-jaw yoke-type, bar-type, and floor press, together with wide assortment of adaptors. Many of the SNAP-ON pullers you now have can be used with this hydraulic set. Get full details from your SNAP-ON representative or write for new literature.

FOR ALL INDUSTRY  
**SNAP-ON TOOLS**  
8019-F 28TH AVENUE • KENOSHA, WISCONSIN

SNAP-ON CG-420 ram and pump assembly shown with A, the CG-400 puller with 9 1/2-in. reach and 13-in. spread; B, the CG-405 puller with 14-in. reach and 15-in. spread; C, the CG-425 heavy-duty puller with 19-in. reach and 20-in. spread.



For More Information Write No. 244 on Place Mark Card—Page 32

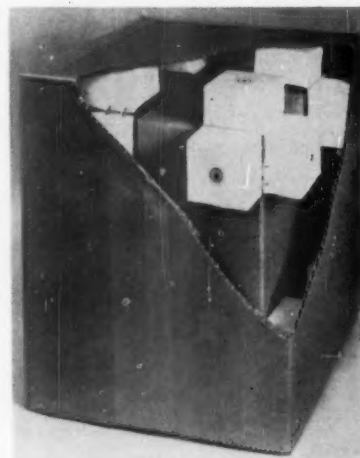
## Products

(Continued from page 157)

that cannot be done with standard tin-lead solders. Compartmented, wood research and development kit contains sixteen varieties of soldering chemicals—fluxes, solder paste, flux and dross removers and printed circuit board coatings—eleven kinds of flux-filled and solid wire solders in handy dispenser tubes, and three different foil solders for making preforms. Solders and fluxes included have unique performance characteristics, and also included are flux finder guide, solder select on chart, soft solder alloys diagram and solder alloy chart. Alpha Metals, Inc., 56 Water St., Jersey City 4, N. J.

Write No. 41 on Place Mark Card—Page 32

### Low-Cost Cushion Packaging



A low-cost cushion packaging product cuts shock and vibration damage normally caused to sensitive electronic equipment, instruments and other fragile products during shipment. Pads of foam laminated to heavy corrugated creates a floating inner package held firmly on all sides of shipping container. Reinforcement of foam eliminates settling of material, thus maintaining a tight package that gives 100% shock and vibration absorption. Available in standard thicknesses to handle packages ranging in weight from 8 to 150 lbs. Hardigg Industries, South Hadley Falls, Mass.

Write No. 42 on Place Mark Card—Page 32

For More Information about ad on facing page  
Write No. 245 on Place Mark Card—Page 32→

PURCHASING





a miss is as good as a thousand miles

the higher you aim  
for new **productivity**  
the more you need  
Scovill's "count down"  
on quality



**brass**  
**copper**  
**aluminum**  
MILL PRODUCTS

**MADE IN USA**

*... and made better to bring out the **BEST** in your products*

**SCOVILL MANUFACTURING COMPANY**

Mill Products Division, 99 Mill St., Waterbury 20, Conn., Phone Plaza 4-1171

6SC60



**SCOVILL**

gives you  
fault-free metals  
® for **high speed**  
fabrication

**Advanced mill processes** — Scovill pioneered the **CONTINUOUS CASTING** of Brass alloys to bring fabricators of Brass Mill Products the new standard of metal soundness and uniformity made possible by this unique process.

Other more recent new mill installations at Scovill include precision-controlled Aluminum rolling mills; the advanced Sendzimir Mill for extra-close-tolerance sheet and strip; the World's largest vertical tube extrusion press, with automatic induction billet-heating equipment, as well as one of the Industry's newest and largest specialized tube mills.

**Advanced quality-control procedures** — insure dependable **UNIFORMITY** in all Scovill Mill Products specifications . . . order to order and lot to lot. They promise more accurately dimensioned, finer quality mill products essential to efficient high speed fabrication. Quality-control is a full-time job at Scovill, and the results are evident to fabricators in their own higher production speeds, minimum tool and machine adjustments and superior quality of finished products.

**Advanced inspection equipment and methods** — There are many inspection stations along each of the Scovill production lines for Brass strip and sheet, rod, wire and tube. In addition, samples of alloy billets and bars, as well as of finished mill products, undergo detailed inspection and test procedures in Scovill's Metals Research laboratories. Brass Mill Products that pass these rigid inspections and tests are considered by many to be the finest in the World.

**Advanced packaging** — Unique Scovill packaging methods protect quality, finish and condition, make it easier for fabricators to warehouse, handle and use Mill Products. Time- and cost-saving innovations such as extra-long-length coils of strip, self-feeding wire "dispenser" drums, special long lengths when required in tube mill products, are available to fabricators who need them.

**Make Scovill a part of your competitive team, let us contribute our wealth of experience and ultra-modern equipment to the success of your NEW products and production plans.**

**SCOVILL MANUFACTURING COMPANY**

Mill Products Division, 99 Mill Street, Waterbury 20, Conn. Phone Plaza 4-1171



**MADE IN USA**

*... and made better to bring out  
the **BEST** in your products*



**BRASS**

**COPPER**

**ALUMINUM**

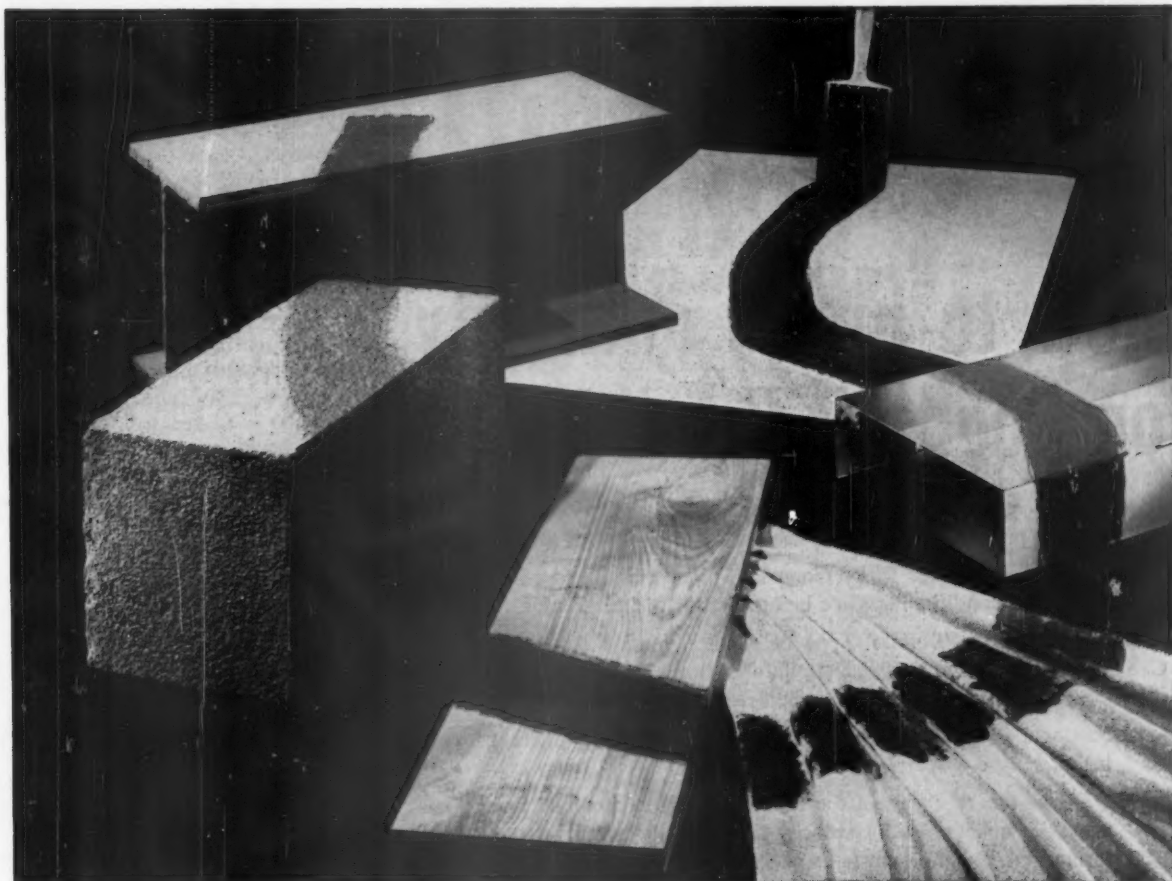
**MILL PRODUCTS**



NEWEST WEAPON IN THE WAR AGAINST CORROSION AND ABRASION!

# Coro-Gard® 1706

BRAND PROTECTIVE COATING



PROTECTS MOST SURFACES FROM CORROSIVE FLUIDS AND FUMES, WATER OR ABRASIVE PARTICLES

From the Research Laboratories of 3M comes a remarkable new coating to fight corrosion—CORO-GARD 1706 Brand Protective Coating. This neoprene rubber based coating air-cures to a tough, rubbery, protective film with exceptional resistance to corrosive fluids and fumes, water and abrasion. It maintains exceptional adhesion, flexibility, corrosion and abrasion resistance even after these strenuous test conditions: 2000-hour salt-spray attack; 20 weeks' submersion in 20% solution of hydrochloric acid; six-month weather exposure in Miami, Florida.

CORO-GARD 1706 Coating speeds production, provides unusually high coverage to cut costs. It brushes as easily as paint, is self-priming, yet goes on vertical surfaces with minimum sagging. For steel, aluminum, wood, concrete, cloth and some plastics—wherever corrosion or abrasion must be fought—specify new CORO-GARD 1706 Coating. It provides maximum protection at low cost.

For complete performance data without obligation, write today on your company letterhead to: AC&S Division, 3M Company, Dept. SBCC-60 St. Paul 6, Minn.

"Coro-Gard" is a reg. TM of 3M Co.

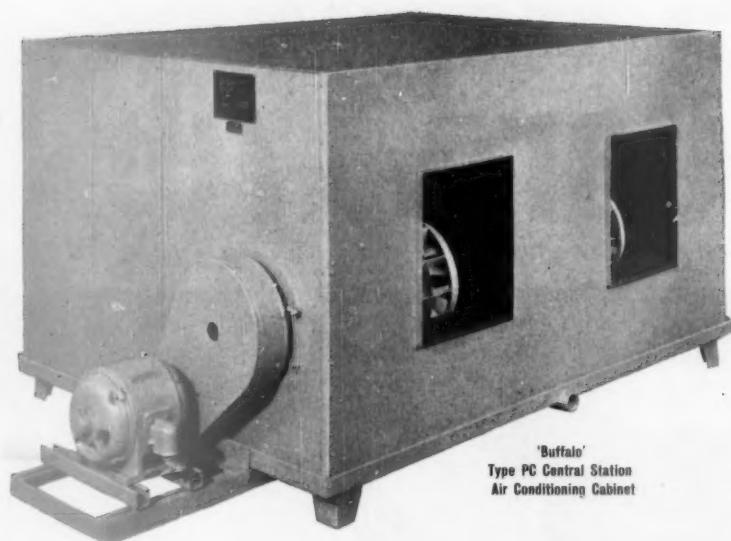
ADHESIVES, COATINGS AND SEALERS DIVISION

**MINNESOTA MINING AND MANUFACTURING COMPANY**

... WHERE RESEARCH IS THE KEY TO TOMORROW







'Buffalo'  
Type PC Central Station  
Air Conditioning Cabinet

## How to be an authority on Good Air Conditioning

Base your selection of air conditioning units on the reputation of the maker and what the product will deliver.

**THE MAKER** — Buffalo Forge Company, pioneer and leader in the field of industrial air conditioning since before the turn of the century.

**THE PRODUCT** — 'Buffalo' Type PC Central Station Air Conditioning Cabinets. Check these exclusive 'Buffalo' features that mean trouble-free operation, low maintenance costs and efficient year-after-year performance:

1. **Sectional panel construction** of heavy gauge galvanized sheets for easy installation, easy parts replacement.
2. **Quality fans**, the heart of the unit. Housings streamlined for low air velocities and low cutoff velocity for high efficiency and stable performance. All-aluminum fan wheels for light weight, corrosion resistance, spark resistance. Fan shafts of oversize hollow type for perfect balance and operation well below critical speed. Bearings are externally lubricated. 'Buffalo' Fans have backward-curved blades for stable performance at any operating range plus protection against motor overloading.

In considering your investment in air conditioning, make it pay off to the fullest — with 'Buffalo' PC Cabinets. Call your nearby 'Buffalo' Engineering Representative for the facts.



**BUFFALO FORGE COMPANY**  
Buffalo, New York



Buffalo air handling equipment to move, heat, cool, dehumidify and clean air and other gases.



Buffalo Machine Tools fit drill, punch, shear, bend, slit, notch and cope for production or plant maintenance.



Buffalo Centrifugal Pumps to handle most liquids and slurries under a variety of conditions.

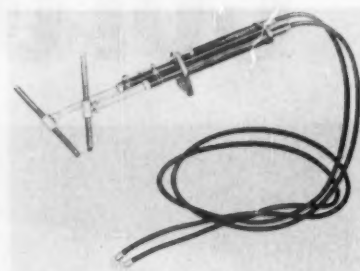


Squaring machinery to process sugar cane, coffee and rice. Special processing machinery for chemicals.

For More Information Write No. 247 on Place Mark Card—Page 32

## Products

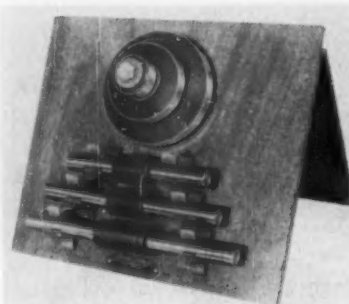
### Versatile, Intense Heat Arc Torch



A versatile arc torch enables existing arc welding equipment to take on jobs formerly done only with gas. Torch creates intense heat electrically and does not exert pressure which could displace molten metal or produce blow holes in thin gauge metal. Available in a-c and d-c models, it can be used for welding, brazing, general heating or preheating prior to welding, soldering and hard surfacing **Metal & Thermit Corp., Rahway, N. J.**

Write No. 43 on Place Mark Card—Page 32

### Complete Line of Highly Accurate Gauges



Through its U. S. distributor, an English firm offers a complete line of gauges for checking micro-meters and the individual "feel" of the user. Conveniently arranged in sets up to 36 in. size, with extremely close tolerances, gauges are truly spherical rods of ample diameter, ground and lapped for exceptional accuracy and long life. Even in larger sizes they are relatively light. Gauges are suitable for plant and laboratory use. **W. G. Haddrell, 223 Essex St., P.O. Box 457, Beverly, Mass.**

Write No. 44 on Place Mark Card—Page 32

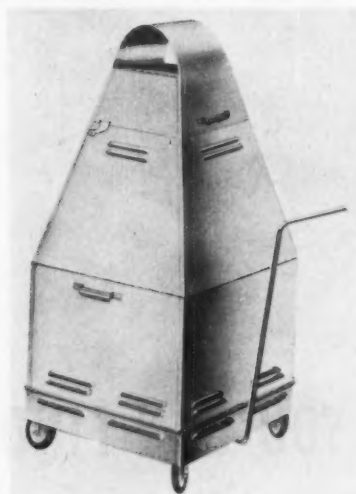


## Quick-Drying Aluminum Paints in Colors

Colorful aluminum-pigment spray paints that dry in minutes are available in blue, copper, gold, gray and green, as well as natural aluminum. Sprayed on wood, metal, concrete or plaster, paint dries to touch in five minutes. Protective drop cloths are not needed. Overspray dries instantly and falls as harmless dust which can be simply brushed away without harm to desks, machinery or equipment. With quick drying time, desired thicknesses can be built up quickly, ladders and scaffolding need be placed only once, and job time and labor costs are cut. **Tropical Paint Co., Cleveland 2, Ohio.**

Write No. 45 on Place Mark Card—Page 32

## Mobile Combination Incinerator-Receptacle



A combination incinerator-trash receptacle features wheels and pull handle so unit may be pulled to safe area and contents burned without emptying. Six-inch wheels are attached with inverted "U" shaped brackets on each corner of burner. Front wheels swivel so unit may be pulled in virtually any direction. Scientifically controlled burning is safe, thorough, requires no watching and minimizes smoke and smell. 53 in. high excluding wheel attachments and 24 in. sq. at base. **The Alsto Co., 4007 Detroit Ave., Cleveland, Ohio.**

Write No. 46 on Place Mark Card—Page 32

JUNE 20, 1960

# ASK THE MAN WHO RUNS ONE

## WHAT TO LOOK FOR IN A DRILLPRESS

Chances are, he'll say a drillpress has to be rugged to take production work, year after year. Next, he'll want accuracy, which means a rigid frame and precision-fitted parts — to keep rejects to a minimum. Last but not least, flexibility. Easy adjustments for fast setups, convenient operation. You can get some of these important features in most makes.

You get all of them in 'Buffalo' Drills. This is because we've been building drills exclusively for industrial use for over 80 years. Knowing what the professional shop wants, we've built all these features into every 'Buffalo' Drill . . . from the popular No. 15 to the great "RPMster" with its instantly variable speed drive and hollow spindle for drilling exotic metals.

Chances are, too, that your operators, your production foreman and setup man will second your choice of 'Buffalo'. Ask your machine tool dealer about the complete line of 'Buffalo' Drilling Machines or write direct for details.



See 'Buffalo' Machine Tools in Action  
at Machine Tool Exposition . . . Booth 551

## BUFFALO FORGE COMPANY

Buffalo, New York



Buffalo air handling equipment to move, heat, cool, dehumidify and clean air and other gases.



Buffalo Machine Tools to drill, punch, shear, bend, slit, notch and cope for production or plant maintenance.



Buffalo Centrifugal Pumps to handle most liquids and slurries under a variety of conditions.



Squaring machinery to process sugar cane, coffee and rice. Special processing machinery for chemicals.



For More Information Write No. 248 on Place Mark Card—Page 32





## BUY THE LOWEST-COST BATTERY YOU CAN FIND



New 800 amp-hr Model TGS Exide-Ironclad. Same outside dimensions as former 720 amp-hr battery. Other new 22½-in. high Exide-Ironclad Batteries in capacities from 400 to 1280 amp-hr.

In the whole world, only the new Exide-Ironclad TG Super gives you so much battery power for so little. Packs 11% more power with no increase in size. That means your present trucks can do more work every shift. And this more powerful battery actually costs you less per amp-hr. Same long Exide-Ironclad life potential for low annual cost. Search all you want. You'll discover, as most others have, that the Exide-Ironclad is truly the lowest-cost battery you can find. Write for our new bulletin. Exide Industrial Division, The Electric Storage Battery Company, Philadelphia 20, Pa.



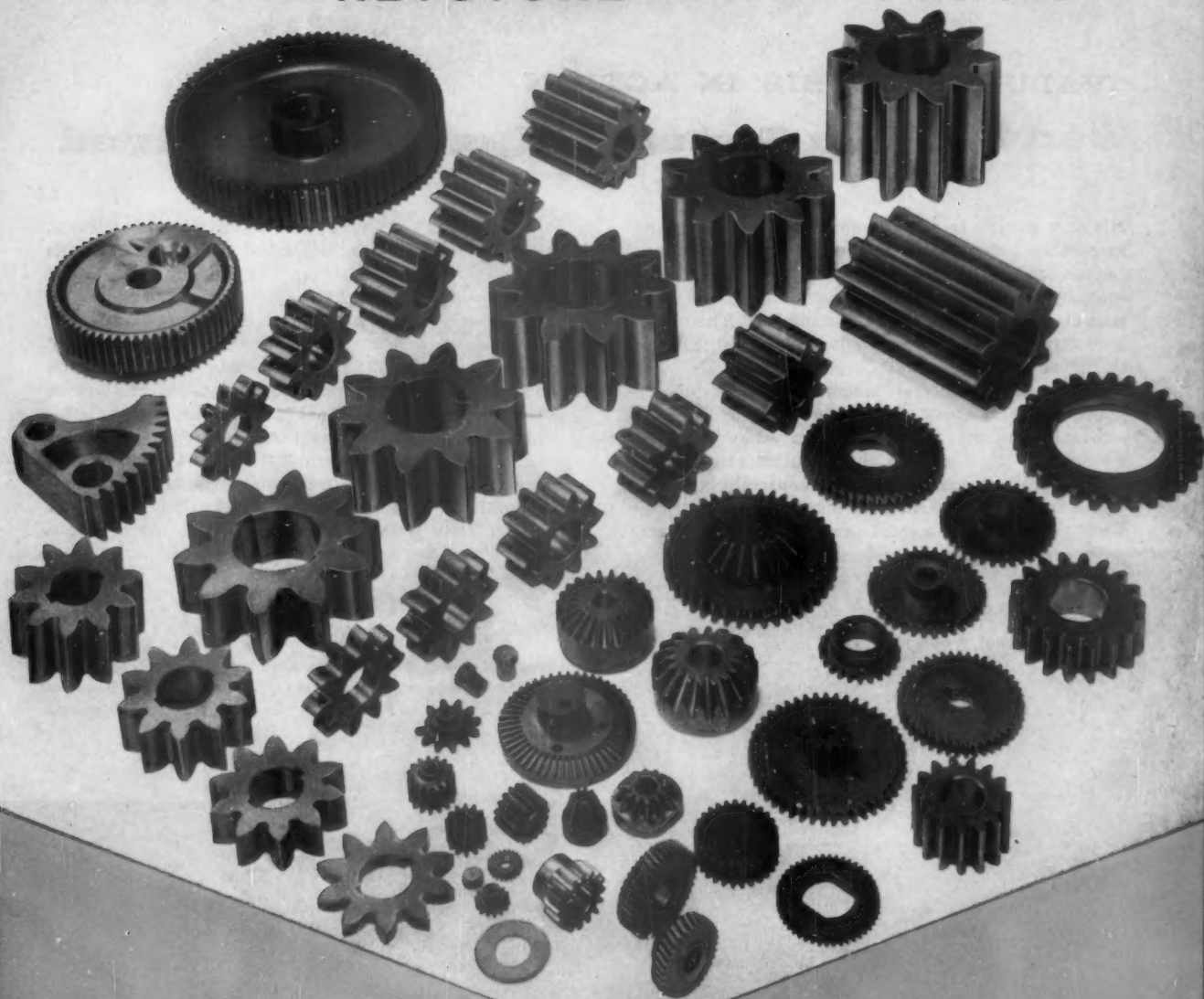
New Exide battery for small industrial trucks and personnel carriers. Model 3-KCS-9. Features new-design tubular positive plate. Up to 30% more capacity than automobile batteries. Up to four times their average life. Fits same compartment. Write for new bulletin.

# Exide®

For More Information Write No. 249 on Place Mark Card—Page 32

For More Information about ad on facing page Write No. 250 on Place Mark Card—pg. 32→  
PURCHASING





## THE PLACE OF GEARS

### IN KEYSTONE POWDER METALLURGY

A few years ago, the simplest gear shapes seemed remarkable in themselves as they came chuting from the powder metal presses. Those uncomplicated spur gears exemplified all the tenets of powder metallurgy—low cost, high volume parts that required no expensive machining, and delivered excellent service in the right applications.

But our progress has moved swiftly in sintered gears since those pioneer days. The development of better materials has opened up many new

medium- and high-strength applications to powder metal service. Imaginative tool engineering and press design have made possible the widest range of gear types . . . clusters, bevels, pinions, sectors, helicals . . . saving progressively more money as designs become more complex.

Today, gear production at Keystone is major in importance. We can meet your requirements to the dot in type, material, quantity, delivery and performance. In brief, we're geared to serve. Call us!

**Keystone** CARBON COMPANY  
ST. MARYS, PA.  
POWDERED METAL PARTS DIVISION



## VALUE ANALYSIS IN ACTION

### How General Magnesium solved

It's easy enough to get grinding wheels that will grind magnesium fast. But they're liable to leave a surface you can use for a nail file. And, when you buy wheels that are specially formulated for fine finish, chances are it will load up and glaze over like a skating rink. Then, if you concentrate on the glazing problem, watch out for wheels that wear like paper shoes.

The people at General Magnesium Foundry, in St. Louis, know all about these particular problems from personal experience. So, when they gave Bay State's Bob Yochum the job of working out a solution, they hoped he might be able to do something but were not really optimistic.

As a man with a considerable knowledge of metallurgy, Yochum knew he had a tough problem so he spent a great

deal of time at the foundry itself, studying every relevant operation. Then, he sent a detailed report of his findings and recommendations to Bay State's engineering staff in Westboro and it wasn't long before he had wheels on hand for General Magnesium to test.

The results were surprising. The new wheels not only cut fast but, at 9,000 s.f.p.m., produced a 250 micro-inch finish (rms) on aluminum and magnesium castings of aircraft quality. They did not load and they lasted appreciably longer than the wheels they replaced.

This success story is typical of the way Bay State applies imaginative engineering to painstaking analysis of a specific problem. Your own Bay State distributor or direct representative is trained and equipped to do the same kind of job for you. *Better grinding at lower cost . . . that is his business.*



*Examining a finished magnesium casting are (left to right) Jim Fischer, Manufacturing V. P. at General Magnesium, Bob Yochum of Bay State, Mel Belton, Plant Supervisor, and Ray Schneidewind, Quality Control.*

Operator Charles E. Meyer finishes the edges of a large magnesium casting with Bay State's 16 x 2 x 1 1/2 high speed, long life, non-loading finishing wheel.





## 4 major grinding problems with 1 wheel



After getting his engineering degree from the University of Missouri School of Mines & Metallurgy, Robert J. Yochum spent 6 years in the ship-building industry where he acquired a knowledge of metal-working techniques that was both extensive and intensive. Five years with Bay State have broadened his experience throughout the metal-working industries in general and given him a highly concentrated background in abrasive problems in particular.

# BAY STATE ABRASIVES



Bay State Abrasive Products Co., Westboro, Massachusetts.

*In Canada:* Bay State Abrasive Products Co., (Canada) Ltd., Brantford, Ontario.

*Branch Offices:* Chicago, Cleveland, Detroit, Los Angeles, Pittsburgh. *Distributors:* All principal cities.

For More Information Write No. 251 on Place Mark Card—Page 32



# Get Rocket-Fast Shipment from world's largest STOCK of Stainless Steel Fasteners

No long countdowns here. Allmetal stainless fasteners are stockpiled in advance—ready to go on your order. Fasteners in Commercial, AN, MS specs. You get fast delivery, precision quality, plus mass production economy when buying direct from stock. Special fasteners also fabricated to your exact requirements on extremely short notice. Full range of raw materials assures prompt service. Simply send blueprint or specifications.

Pins • Bolts • Nuts • Screws (including slotted and Phillips—magnetic and non-magnetic) • Washers • Cotters • Rivets • Rods • Studs • etc.

PHONE OR WRITE for prompt quotation or shipment. Send for catalog.

**ALLMETAL®**  
SCREW PRODUCTS COMPANY, INC.

Manufacturers of Stainless Fasteners Since 1929

821 Stewart Avenue, Garden City, L.I., N.Y.  
Phone: Pioneer 1-1200 TWX GCY 603

Midwest Division  
6424 W. Belmont Avenue, Chicago 34, Illinois  
Phone: AVenue 2-3232 TWX CG 3185

West Coast Division—Office and Warehouse  
5822 West Washington Blvd., Culver City, Calif.  
Phone: WEbster 3-9595 TWX LA 1472

For More Information Write No. 252 on Place Mark Card—Page 32

## Products

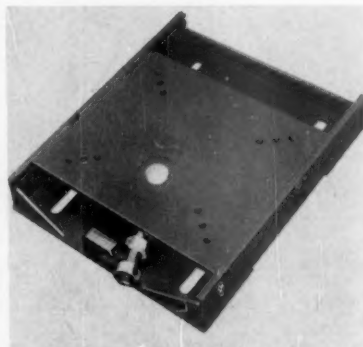
### Two Cold-Applied Emulsion Coatings



Two cold-applied emulsion coatings are highly resistant to permeation by chemicals. One is heavy-duty polymer emulsion particularly suited for intermittent splash and high chemical "fallout" areas. It can be applied by brush, roller or spray, and it is intended for use on structural steel, deck areas and sheet piling. Extraordinary resistance to abrasion and temperature tolerance up to 400 degrees F extend range of use. Second coating, which also has very low permeability rating, has been successfully used to adhere cellular glass insulating blocks to storage tanks and underground piping. It is ideal as top coating for insulation. **Koppers Co., Inc., Koppers Bldg., Pittsburgh 19, Pa.**

Write No. 47 on Place Mark Card—Page 32

### Pancake Motor Bases Save Space

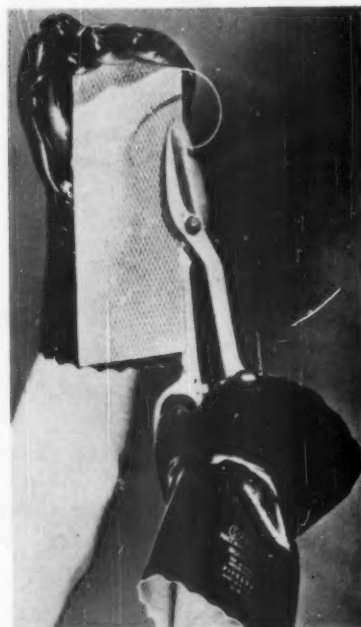


Low "pancake" type sliding motor bases are designed for use in variable-speed sheave installations where space is at a premium.

Bases are only 1-9/16 or 1-21/32 in. high, and amount of movement is either 4½ or 6 in. with 9 in. movement furnished by special order. Attractive feature is provision for rapid release of adjusting screw. Motor base can be moved quickly and easily to shorten center-to-center distance and free V-belts from the grooves for sheave adjustment. **T. B. Wood's Sons Co., Chambersburg, Pa.**

Write No. 48 on Place Mark Card—Page 32

### Neoprene Gloves for Rugged Jobs











Long-lasting work gloves in a special design are intended for rugged industrial jobs that are hazardous to handle and at the same time require safe, sure gripping. Made of black, liquidproof neoprene with a soft flannel inner lining, gloves come in three styles: knit-wrist, 12 in. gauntlet and 14½ in. gauntlet. Palm and thumb crotch areas, which are most susceptible to abrasion and wear, are reinforced to double thickness without impairing flexibility. Gloves withstand snagging, cutting and abrasive abuse from heavy rope, cable and metal sheeting, and resist deterioration from oils, acids, caustics and greases. **Pioneer Rubber Co., 296 Tiffin Rd., Willard, Ohio.**

Write No. 49 on Place Mark Card—Page 32



# Maybe zirconium copper wire is your answer

Looks like ordinary wire, but it's new and rather special. Amzirc®—zirconium copper, Cu 99.88%, Zr .12%—combines  high electrical conductivity (90 to 95% IACS at room temperature) and strength  retention at elevated temperature  in the aged condition. Tensile strength of zirconium copper cold worked 80% and aged is about 70,000 psi at 20 C—52,000 psi at 400 C in a short-time test. Naturally, it has attracted interest in the  missile field. We just recently finished drawing a batch of .0179" wire for testing as a conductor in some missile components, and now know that even smaller diameters can be made. We also know it has excellent hot- and cold-working characteristics. But we don't have all the answers yet—nor does anyone else. The reason we call it to your attention is that you may have a problem that won't wait until we can  it as a completely proven product. Possibly we could work together in finding the answer. Our Metallurgical Department and mills are working with many copper alloys offering a variety of unusual property combinations. The answer might be Amzirc—or *Cunisil-837*, our copper-nickel-silicon alloy—or *Chromium Copper-999*—or *Leaded Nickel Copper-831*. All have a potential for special  electrical  applications. 

If you are looking for metals to do new jobs—or to do present jobs better—tell us the combinations of properties you need. Call in your American Brass Company representative or write: The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.

## ANACONDA®

COPPER • BRASS • BRONZE • NICKEL SILVER MILL PRODUCTS

Made by The American Brass Company



### Purchasing Agents, Please Note:



Engineers' Wrenches, 32 sizes, 15° offset, single head, open end. Fed. Spec. GGG-W-636a, Type V. • Engineers' Wrenches, 40 sizes, 15° offset, double head, open end. Fed. Spec. GGG-W-636a, Type IV. • Pin Spanners, 15 sizes, single pin. Fed. Spec. GGG-W-665, Type II. • Adjustable Face Spanners, 3 sizes. Fed. Spec. GGG-W-665, Type III, Class 1. • Adjustable Hook Spanners, 4 sizes. Fed. Spec. GGG-W-665, Type I, Class 1. • Construction Wrenches, 15 sizes, 15° offset, single head, tapered alignment end. • Structural Wrenches, 23 sizes, straight openings with offset heads, tapered aligning ends. Fed. Spec. GGG-W-636a, Type IX, Class 1.

### 132 New Industrial Wrenches Now In Proto Line

The most needed sizes and types of industrial wrenches and spanners are now included in the Proto Industrial Line. These new tools are all drop forged, in high quality carbon steel, heat treated and broached or milled to highest industry standards.

When you need industrial wrenches to build, maintain, or ship with your equipment, call your Proto Distributor. He and your local Proto representative are ready to help you with your tool requirements—for production bottle-necks, OEM sets, or special tools made to your specifications. (In many cases, your special tool needs can be filled "off-the-shelf" from Proto's Contract Sales Department—where thousands of special tools with special shapes and opening combinations are made for industry and the Government every year.)

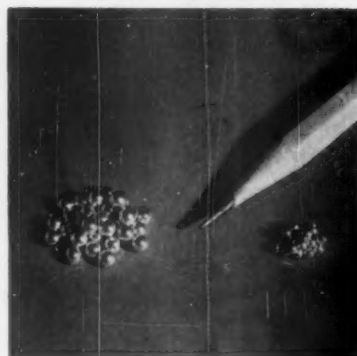


2215 Santa Fe Ave., Los Angeles 54, Calif. • 515 Allen St., Jamestown, N. Y. • 1715 Oxford E., London, Ont., Can.

For More Information Write No. 254 on Place Mark Card—Page 32

## Products

### Money Saving Ball Contacts



Precious metal ball contacts will save the assembler inventory expenses, assembly time and contact costs. Ball contacts are available in eight standard sizes from .028 to .188 in all ductile contact materials. Five or six standard ball sizes can replace dozens of conventional contact types and sizes. They can be assembled automatically and economically. **Contacts, Inc., Wethersfield, Conn.**

Write No. 50 on Place Mark Card—Page 32

### Two Larger-Capacity Water Meters



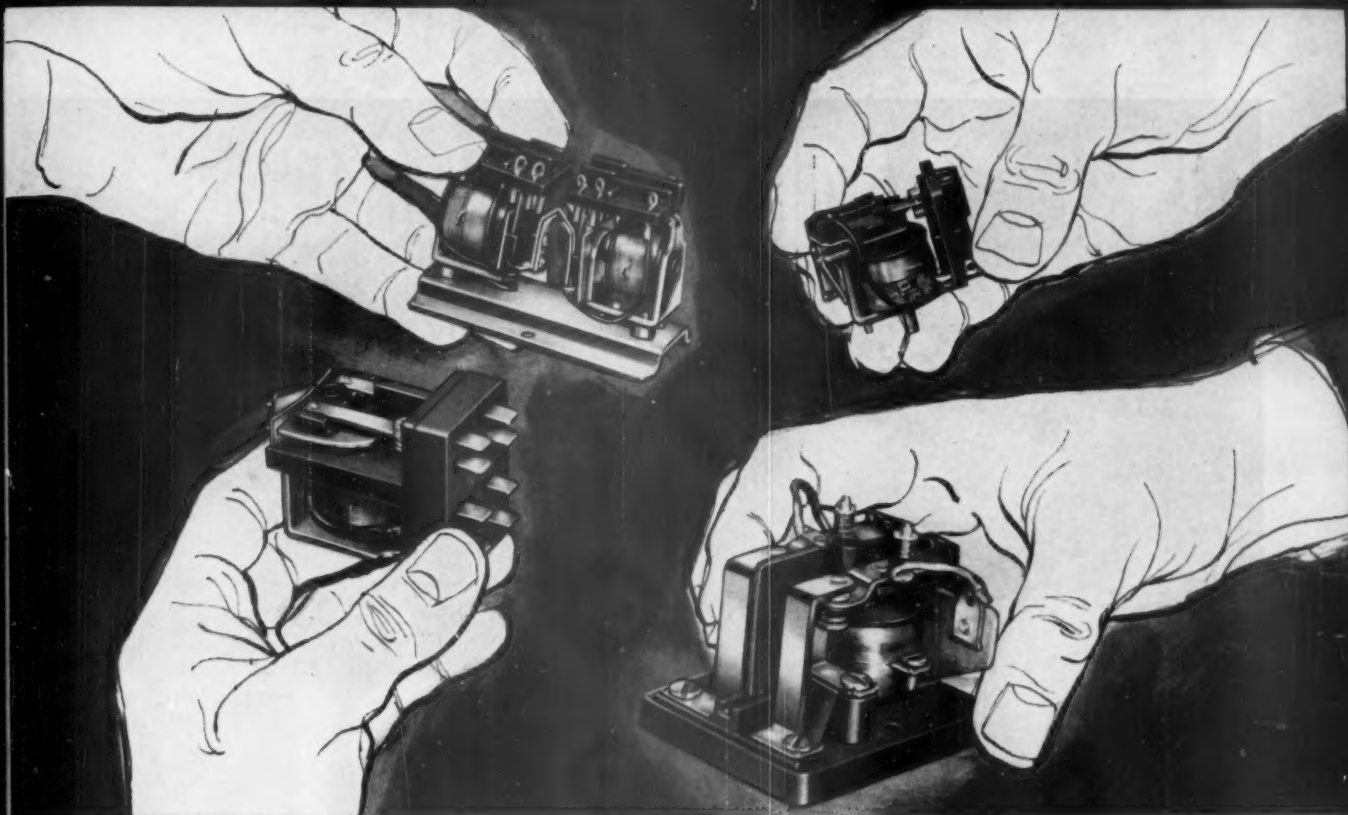
Two larger-capacity water meters have been added to line that already has 5/8, 3/4, and 1 in. sizes. 1½ and 2 in. models have capacities of 100 and 160 gals. per minute respectively, compared with capacities of 20, 30 and 50 gpm for smaller sizes. Features include hermetically sealed register, magnetic drive, and oscillating piston principle. Entire unit contains just fifteen stock parts, of which only two moving parts operate in contact with water. **Rockwell Mfg. Co., Municipal and Utility Div., 400 N. Lexington Ave., Pittsburgh 8, Pa.**

Write No. 51 on Place Mark Card—Page 32

For More Information about ad on facing page  
Write No. 255 on Place Mark Card—Page 32→

PURCHASING





# save time! save money! call your parts distributor for P&B RELAYS



These important savings are yours when you order—from your Electronic Parts Distributor—P&B relays listed with Underwriters' Laboratories, Inc. and Canadian Standards Association:

**SAVE TIME.** You get fast, off-the-shelf delivery. Usually your order is shipped the day after it is received. And no waiting for U/L or CSA clearance . . . this has been done for you. Thus you get your project—and your product—off to a fast start!

**SAVE MONEY.** You save the cost of getting relays listed with U/L or CSA . . . and you need have no big investment in shelf inventory, either. Remember, you pay no premium over factory prices in quantities to 249.

More than 40 different standard P&B relays in 450 different coil voltages and contact arrangements are available from the leading Electronic Part Distributors in your area. For special applications, call your nearest P&B sales engineer.



**PR Series**

Type	Contact Arrangement*	Type	Contact Arrangement*
PR1AY	SPST-NO	PR5AY	SPDT
PR3AY	SPDT-NO-DM	PR7AY	SPDT-NO
		PR11AY	DPDT

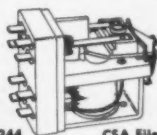
These relays are available in any of the following operating voltages: 6, 12, 24, 115, 230 volts 50/60 cycles AC. Contacts are rated at: 25 amps, 115/230 V. AC 1 phase. 1 hp for 115/230 volt AC motors 1 phase.

\*Read: NO normally open, NC normally closed, DB double break, DM double make.

U/L File E22575

CSA File 15734

**AB Series**



U/L File E29244

CSA File 15734

For appliance and general purpose operations requiring long life and quiet operation. Quick connect terminals. Screw terminal adapters also furnished with each relay. Contact arrangement: DPDT. Rated at 10 amps, 115 V., 5 amps, 230 AC non-inductive by U/L and CSA.

**ABC Series**

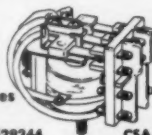


U/L File E29244

CSA File 15734

Medium duty power relay in dust cover. For small motors, industrial controls and similar applications. Contact arrangement: DPDT. Rated at 10 amps, 115 V., 5 amps, 230 AC non-inductive by U/L and CSA.

**KA Series**

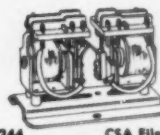


U/L File E29244

CSA File 15734

Small, low cost, general purpose relay for handling automation work, small motors, solenoids, other relays. Contact arrangements: SPDT, DPDT and 3PDT. Rated at 5 amps, at 115 V., AC non-inductive by U/L and CSA.

**KB Series**



U/L File E29244

CSA File 15734

Compact latch relay ideal for memory work and overload applications. Operates on momentary impulse to either coil. Contact arrangements: 4PDT and 6PDT. Rated at 5 amps at 115 V., AC non-inductive by U/L and CSA.



## POTTER & BRUMFIELD

DIVISION OF AMERICAN MACHINE & FOUNDRY COMPANY, PRINCETON, INDIANA

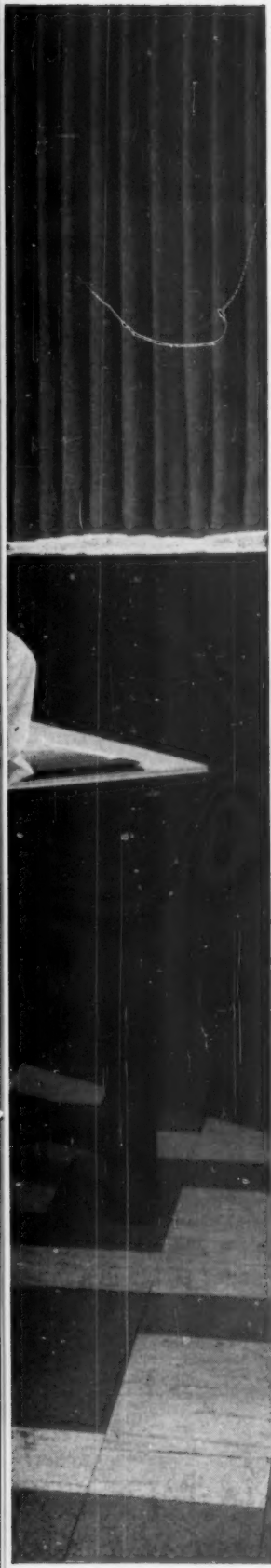
IN CANADA: POTTER & BRUMFIELD CANADA LTD., GUELPH, ONTARIO



# THE AMPLEXOLOGIST







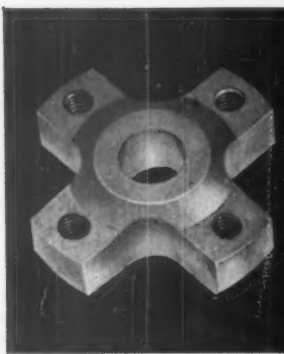
The Amplexologist has a high regard for prospective customers' blueprints. He finds it necessary upon occasion, however, to put them respectfully aside. Especially when he's told: "We tried to make this part out of powder metal a couple of years ago but the supplier couldn't meet our specs."

The Amplexologist, you see, has heard this song before. That's why he puts down the prints and picks up the part. And starts probing.

*What does this part have to do? Under what conditions? Any special strains? Impact? Where? What about the configuration? Is this contour functional? Are these sharp angles necessary?*

Often as not, the answers to these questions hit pay dirt. They usually reveal, in fact, that with a little redesigning another "impossible" part can, after all, be made better and cheaper through advanced powder metallurgy (i.e. Amplexology).

We're happy to say that most manufacturers are eager to eat their own specifications anytime they can save thousands of dollars and still maintain (or improve) quality. Their willing appetite has helped make us the world's largest and most experienced producer of powder metal parts. One more reason why manufacturers say, **When it comes to powder metallurgy—Amplex has the answer.**



#### A LITTLE RE-DESIGNING...

The part shown is an engine fan-pulley hub. It was formerly a solid circular casting. The manufacturer had to machine the face, bore the ID, drill and tap four holes. The Amplexologist re-designed the hub into its present cloverleaf shape—to reduce weight and cost of material. It is now being produced by powder metallurgy as a finished precision part that requires no machining—except tapping the holes. Total savings about 33%.



**SEND COUPON . . .** If you'd like to talk over your product with the Amplexologist. Don't hesitate. He's always happy to get out of the office.

AMPLEX DIVISION • CHRYSLER CORP. • Dept. P6  
P.O. Box 2718 • DETROIT 31, MICH.

Please have the Amplexologist call to look into the possibility of using powder metal parts in our product.

NAME \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

PRODUCT \_\_\_\_\_

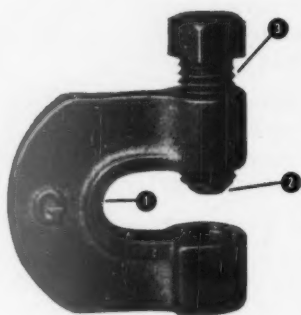
# AMPLEX

DIVISION  
CHRYSLER  
CORP.





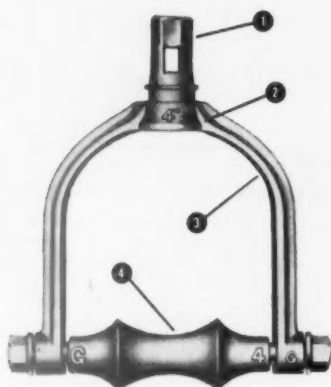
# Look at all the extras you get in Grinnell Pipe Hangers...yet you pay no more!



**GRINNELL C-CLAMP, FIG. 88** — 1 Ribbed, malleable iron casting, for extra strength 2 Hardened steel, cup-point set screw for good "grip" on beam 3 Full thread engagement—casting is drilled and tapped for rod and set screw



**GRINNELL EXTENSION SPLIT RING, FIG. 138** — 1 Nipple engaging thick section of malleable iron gives rigidity for support from above, below or from wall 2 Tapped to take screw. No nut to lose 3 Special ring contour holds pipe or tubing firmly



**GRINNELL ADJUSTABLE SWIVEL PIPE ROLL, FIG. 174** — 1 Swivel shank permits adjustment without elaborate support 2 Locking device prevents accidental adjustment change; no lock nut required 3 Ribbed design in malleable iron for better strength, lightness, appearance 4 Easy installation; maximum adjustment



**GRINNELL CB CONCRETE INSERT, FIG. 282** — 1 One body size accommodates several sizes of rods 2 Slot takes reinforcing rods to assure maximum load rating 3 One-piece body prevents concrete seepage 4 Teeth on insert and nut hold rod firmly in place 5 Homogeneous composition of malleable iron throughout

You get *more* hanger for the money from Grinnell, because Grinnell's huge volume reduces production costs... lowers prices right into line with competitive hangers offering less.

Yet you get *so much more*... wider choice of types and sizes; better quality control; published ratings for *all* hangers; faster delivery from warehouses

nationwide; and more responsible field service by trained Grinnell personnel... regardless of how far from the job site the sale was made! Grinnell Company, 277 West Exchange St., Providence 1, R. I. Branch Warehouses in Principal Cities.

*Remember, The Best Costs No More — from America's #1 Supplier of Pipe Hangers and Supports*



Call your local Grinnell Distributor for pipe hangers, cast and malleable iron fittings, malleable unions, steel nipples—all made by

**GRINNELL**

For More Information Write No. 257 on Place Mark Card—Page 32

For More Information about ad on facing page Write No. 258 on Place Mark Card—pg. 32→  
PURCHASING





**Proof In Performance!**

You Can  
**SEE**  
The Difference

You Can  
**WORK**  
The Difference

You Can  
**HAVE**  
The Difference  
**AT NO EXTRA  
COST**

## Why Cleaner, Brighter LUSTERIZED® Bars Handle Easier and Work Better

If you haven't made a comparison run against ordinary cold finished steel bars with clear, bright Bliss & Laughlin Lusterized Finish bars, you will be impressed with the difference.

Lusterized bars start out cleaner, are less messy to handle, remain clean and bright during storage and production. The absence of processing grit, oil and lime keeps chucking mechanisms on automatics free from clogging and production flowing steadily at a profitable pace. The bright, clean surface often requires no finishing operation, reduces the need for elaborate pre-plating preparation.

Lusterized Finish is a Bliss & Laughlin exclusive. It is another result of a constant research program over nearly 70 years to produce cold finished steel bars that will improve your production and profits. Ask for a new folder detailing the production advantages of specifying Bliss & Laughlin Lusterized bars.

*LUSTERIZED FINISH is the STANDARD FINISH at Bliss & Laughlin*

*Specialists in Finish, Accuracy, Straightness, Strength and Machinability*

**BLISS & LAUGHLIN**

GENERAL OFFICES: Harvey, Ill. • MILLS: Harvey, Detroit, Buffalo, Los Angeles, Seattle, Mansfield, Mass.



*Leading  
Independent  
Producer of Cold  
Finished Steel Bars*



## First cost doesn't measure true value

Take a high alloy casting designed for severe service. Two suppliers quote from the same drawing — same configuration, same composition: One supplier — with no proven background in high alloy work — quotes an apparently lower price than the other.

Should you grab the low-price supplier without investigating? Producing a heat or corrosion resistant casting that stands up is not just a matter of "making a pattern and pouring metal". It is a matter of:

- (1) proper alloy control;
- (2) foundry techniques adapted to the job;
- (3) personnel who know best current practices and who understand casting design.

*The moral: Be sure you are dealing with an experienced high alloy foundry.*



### ALLOY CASTING INSTITUTE

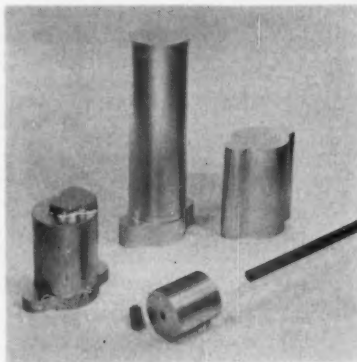
1001 Franklin Ave./Garden City, New York

... For technical information on corrosion resistant and heat resistant castings

May we send you the new ACI Technical Publications List and the 1960 List of Alloy Designations? Both free for the asking.

## Products

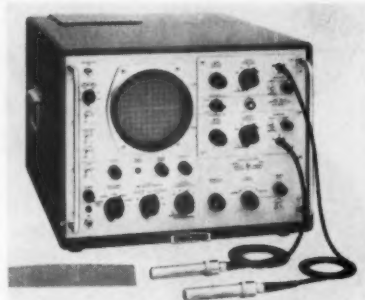
### Aluminum Powder Fabricating Technique



Development of an aluminum powder metallurgy impact extrusion makes possible many precision aluminum parts for high temperature service. APM impact offers a range of technical possibility as broad as that of basic impact process. Components can be produced within tolerances of .0025 in. that retain strength and corrosion resistance properties at elevated temperatures. **Aluminum Co. of America, 1501 Alcoa Bldg., Pittsburgh, 19, Pa.**

Write No. 52 on Place Mark Card—Page 32

### Easily Operated 500 MC Oscilloscope



A new 500 MC Oscilloscope which provides viewing of repetitive milli-microsecond pulses permits operation with the convenience and familiarity of a conventional oscilloscope. The sampling scope has a rise time of less than 0.7 milli-microseconds. It is useful wherever pulse analysis of fast circuits can speed engineering, research or testing. A full 10 centimeter vertical display and high

(Please turn to page 184)

For More Information Write No. 259 on Place Mark Card—Page 32

For More Information about ad on facing page  
Write No. 260 on Place Mark Card—pg. 32→

PURCHASING



**WHITMAN & BARNES**MAKERS OF FINE TOOLS SINCE 1881  
**DRILLS AND REAMERS**

## There's more to the buy than meets the eye

How do I know? We had a finish problem in reaming cast steel. Best finish we were getting was 150-175 micro-inch. We needed 60 or better. A W&B Service Engineer came in with one of their 1-1/16" Chucking Reamers. He checked feeds and speeds—finally came up with .011 per revolution and 60 SFM. He recommended a secondary grind on the chamfer to assure clearance, then added a second chamfer of 67%. We were able to get and maintain a reamed finish of 40-50 micro-inches. At the end of the day, the operator was

getting all good parts and saving substantial time per piece. In a case like ours, W&B's technical help, service and consistent reamer quality really convinced me that initial price is merely one factor. Find out for yourself . . . test W&B tools in your plant under your conditions. Call them in direct or through your industrial distributor. Do it today. See if you can't get better results.

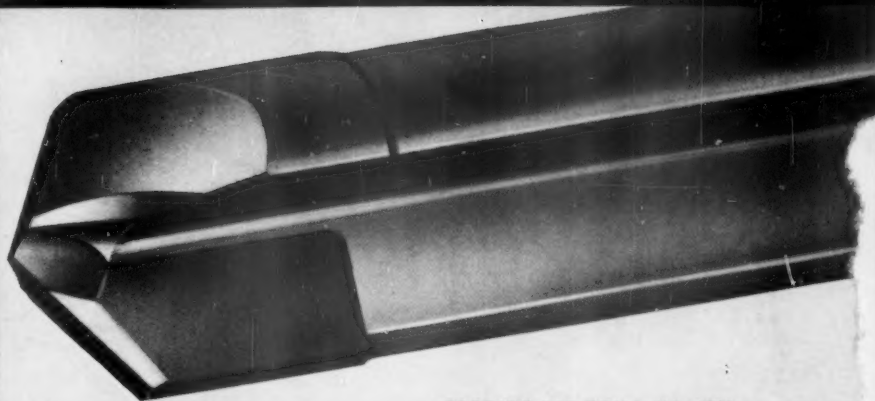
**PARTNERS IN PRODUCTION PROGRESS**

# WHITMAN & BARNES

40000 PLYMOUTH ROAD • PLYMOUTH, MICHIGAN

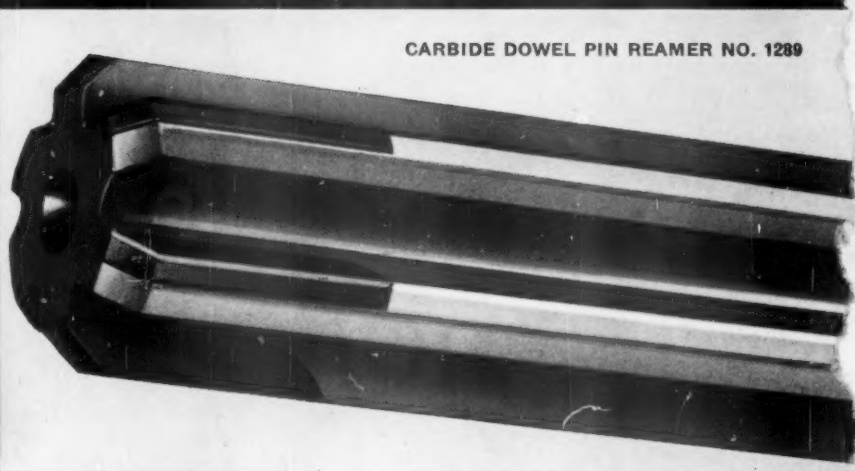
DRILLS • REAMERS • END MILLS • COUNTERBORES • COUNTERSINKS • CARBIDE TOOLS • SPECIAL TOOLS





CARBIDE DIE DRILL NO. 1500

## Reduce Tip Failures with W & B Perma-Braze Carbide Tools



CARBIDE DOWEL PIN REAMER NO. 1289

**CALL YOUR  
WHITMAN & BARNES  
DISTRIBUTOR FOR...**

**RELIABLE ENGINEERING SERVICE**

**COMPLETE IN-STOCK SELECTION**

**PROMPT DELIVERIES**



**FREE LITERATURE**  
**on carbide tools—write today!**

Perma-Braze is an advanced process pioneered and perfected by Whitman & Barnes that enables carbide tips to be brazed with a specially developed high temperature alloy at the same time the high speed bodies are hardened. The result is uniform body hardness and carbide tips that will not loosen due to braze melting. Your payoff is greatly reduced tip failures . . . less machine down-time . . . longer tool life. You get lower tooling costs *and* a more efficient operation. Ask your W&B distributor about Perma-Braze carbide tools today!

**W&B**

END MILLS • COUNTERSINKS • COUNTERBORES • CARBIDE TOOLS • SPECIAL TOOLS



**WHITMAN & BARNES**  
"MAKERS OF FINE TOOLS SINCE 1848"  
**DRILLS AND REAMERS**

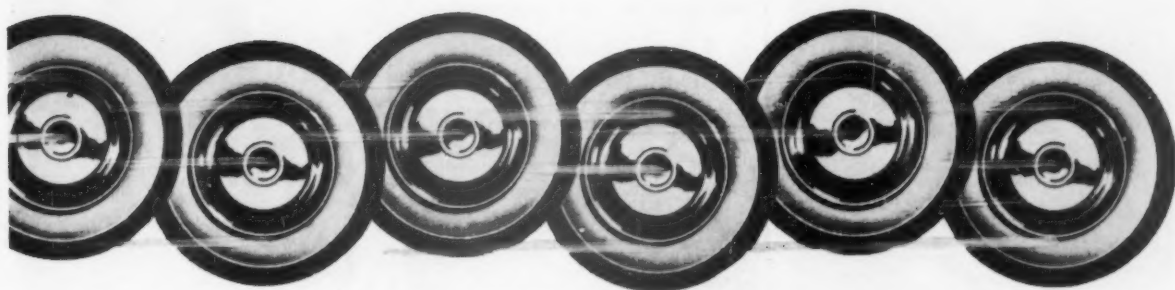
40000 PLYMOUTH ROAD • PLYMOUTH, MICHIGAN  
NEW YORK CHICAGO LOS ANGELES



Purchasing Agents across the country confirm the

# OK in Oakite

when they look for availability of cleaning compounds



When availability of a cleaning compound is important to your production or maintenance needs—it is good to know that Oakite carries stocks in 57 warehouses throughout the country. From the warehouse nearest you, your local Oakite man can take care of your requirements quickly and efficiently.

Too, count on the Oakite man for personal service. But count also on his spe-

cialized knowledge. Ask him how you can economize with more efficient cleaning methods, more effective materials. And ask him about the results of latest cleaning research . . . facts on time and cost-saving mechanized equipment . . . the benefits of materials *designed* to do the job.

Oakite Products, Inc., 54 Rector Street, New York 6, N. Y.

#### IT'S GOOD PURCHASING POLICY TO ASK OAKITE ABOUT:

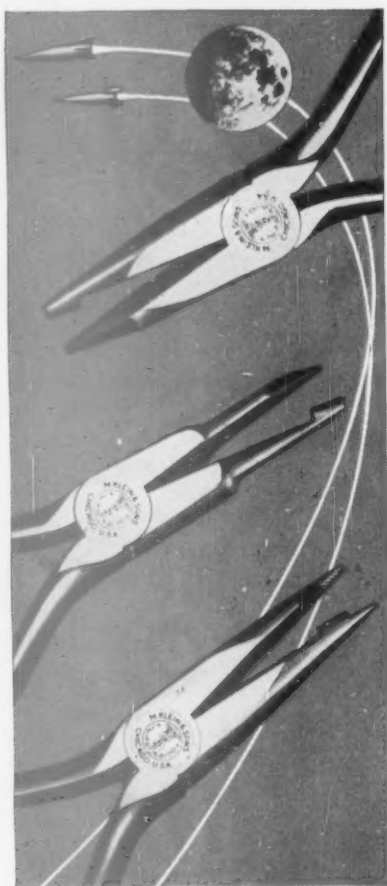
- Aluminum Cleaners, Etchants
- Cafeteria Sanitation
- Coach Washing Compounds
- Descalants; Derustants
- Hot Tank Cleaners
- Paint Strippers
- Prepaint Phosphate Treatment
- Steam-Detergent Cleaning Guns
- Barrel Finishing Compounds
- Chemical Sterilization
- Conversion Coatings
- Electrocleaners
- In-Place Cleaning Heat Exchangers
- Plant Maintenance Cleaning
- Spray Booth Maintenance
- other Mechanized Cleaning Methods





# 3 KLEIN PLIERS

to make electrical wiring easier



Three newly engineered Klein Pliers which will solve difficult problems in the wiring of electronic assemblies.

## ALL-PURPOSE ELECTRONIC PLIER

Shear blade cuts flush and holds clipped end of wire—Requires no sharpening; will cut hard or soft wire. Smooth, continuous action prevents shock which may damage resistors. For bare wire up to T8 gauge. Patent pending. No. 260-6—length 6 $\frac{1}{2}$ " No. 260-6C—with coil spring that holds jaws open.

## NEEDLE-NOSE PLIER

Similar to No. 260-6 but nose has been slimmed to permit use in confined areas. Patent pending. No. 261-6—length 6 $\frac{1}{2}$ " No. 261-6C—with coil spring to hold jaws open

## PLIER WITH KNIFE AT TIP

Jaws behind blade hold clipped wire end A shear-cutting plier that will cut hard or soft wire. Coil spring to keep jaws apart. Pat. No. 2,848,724. No. 208-6PC—length 6 $\frac{1}{2}$ "



Write for Catalog 103-A which shows the complete line of Klein Pliers, including 20 pliers recently developed.



For More Information Write No. 262 on Place Mark Card—Page 32

## Products

(Continued from page 180)

vertical amplifier sensitivity permit pulse analysis in greater detail than previously possible. A fast rise sync pulse, suitably delayed from the start of the oscilloscope trace, is available for triggering external circuits. In situations where the test circuit will respond to this trigger, a delay line is unnecessary. A dual trace amplifier, a plug-in unit for the new scope, provides simultaneous viewing of two phenomena and accurate time comparisons. **Hewlett-Packard Co., 275 Page Mill Road, Palo Alto, Calif.** Write No. 53 on Place Mark Card—Page 32

## Ultrasonic Cleaning Units More Efficient



An ultrasonic cleaning system based on a unique, sandwich-type transducer is reported to be more efficient for many applications than those using magnetostrictive or barium titanate transducers. Units are produced in both high and medium intensity versions. Standard tank capacities range from 2 to 75 gallons, consuming 150 to 2000 watts. Lead zirconate titanate transducer is designed to operate at 25 kc. Because it can convert larger amounts of power than barium titanate transducers used with 40 kc installations, it may be operated as a full-wave system, thus doubling the effective power output per unit area. **Branson Ultrasonic Corp., 40 Brown House Rd., Stamford, Conn.**

Write No. 54 on Place Mark Card—Page 32



I'm  
no  
tax  
expert  
but...

"I found one way of saving my company a fabulous amount of money!

I started ordering our shipping labels from Ever Ready, where you get a 'quality' job at a low, low price—because Ever Ready is one of the largest and most experienced label producers in the country."

Ever Ready's tremendous volume, twice that of most other label printers, means lower costs for us—lower prices for you.

Ever Ready's shipping labels are easy to order by mail. If you use 6000 or more shipping or mailing labels per year you'll find amazing savings with Ever Ready. Just mail this coupon for our helpful brochure.



357 Cortlandt Street . . . Belleville 9, N. J.

- ☐ Please send me the Spot Carbon Label folder.  
☐ Please send me brochure on mailing and shipping labels.

Name ..... Title .....

Company .....

Street Address .....

City, Zone, State .....

For More Information Write No. 263 on Place Mark Card—Page 32

PURCHASING



# aluminum sheet

...or practically any aluminum mill product



## by the pound or by the ton from the Reynolds Distributor

Why tie up money and space in a big inventory of aluminum mill products? Get all the aluminum you need—as you need it—from the nearby Reynolds Distributor. Chances are, he stocks just the type, size, and alloy you want—and he can get it to you *fast*. His specially-trained men can give you cost-cutting technical help. You get *more* than metal from the Reynolds Distributor. *Reynolds Metals Company, P.O. Box 2346-DK, Richmond 18, Virginia.*



Watch Reynolds TV shows: "BOURBON STREET BEAT" and "ADVENTURES IN PARADISE"; and "ALL STAR GOLF" (resuming in October)—ABC-TV

For the name of the nearest Reynolds Distributor, look under "Aluminum" in your classified phone book



# Better Printing Methods Are Ahead

By Edward Blank



Workman is shown exposing a flat Dycril photopolymer printing plate. This new process was recently made commercially available.

**T**HE PRINTING buyer is a direct recipient of the results of technological developments which save time, save labor, and increase quality. There can be no progress in the direction of getting these advantages without technological changes, since it is obvious that production will not increase as a result of any workman working faster or better today.

An increase in productivity will only come as a result of new developments, new methods, and new machines. The age of electronics and automation has already arrived for many industries and is rapidly approaching the printing industry.

The trend throughout the industry, therefore, will be towards specialization. Even today, printers in their attempts to lessen competition and to improve service, quality, and profits have

turned to specialization.

The printers who specialize have the most modern and adaptable equipment for their particular operation. These are the printers who will seek out and buy the new electronic and automated equipment for their particular plant.

### Must Know Printers

Printing buyers will have to be familiar with and use the facilities of printers who are operating these new machines—in order to obtain the benefits of better service and quality at lower cost.

In the future, the products of film typesetters will become increasingly important in letterpress platemaking as more powderless-etched plates and DuPont photopolymer plates are made available. The important point is that all platemaking for all processes

will be made from film. Therefore it is apparent that there will be an increase in use of film typesetting machines and the use of film in the future.

### Converts Type to Film

Another comparatively new development is Brightype. The major use of the Brightype process is to convert the metal type page made up with letterpress engravings or electrotypes into a film positive. Almost exclusively, this film positive is presently used to make litho plates. However, a contact negative of the film positive will automatically provide a bridge to produce a letterpress plate.

Brightype is being used for encyclopedias, book work, publication work, catalogs, advertising, and other printed matter. It promises to be a very important development as the need for a film product increases with powderless etched and photopolymer plates.

Although not a recent development, tape-operated linecasting machines or teletypesetters certainly deserve mention. Printers have found that tape-operated machines turn out two to four times more than manually operated linecasters.

Automatic electronic engravers are a most wonderful development for letterpress. The Fairchild Scan-A-Sizer electronically engraves halftone plastic plates. The reflection copy is observed by an electronic scanning head which transmits impulses and causes a heated stylus to cut the image in the plastic plate.

This machine can engrave direct printing plastic halftone  
(Please turn to page 188)

Mr. Blank is director of production management and new developments at New York Employing Printers Association.

For More Information about ad on facing page Write No. 265 on Place Mark Card—pg. 32→

**PURCHASING**



# Remington creates the Standard for typing perfection...

## the new Remington Standard®

Here is the look...here is the touch that brings the ultimate in modern typing. From every angle, each clean line of this typing beauty adds distinction and taste to today's business office.

The jewelled precision of its FOLD-A-MATIC construction gives a responsiveness of touch that has to be experienced to be believed. Learn the details of its host of work-saving features. Write to Remington Rand, Room 1634, 315 Park Avenue South, New York 10, N. Y., for a descriptive four-color brochure R9041.



**Remington Rand**  
DIVISION OF SPERRY RAND CORPORATION



# How to Save Time and Money by Giving Every Buyer His Own Copy of PURCHASING

As a person shouldered with the responsibility for buying wisely and well, you deserve to have your own personal copy of PURCHASING Magazine . . . to read now . . . to save as a valuable "idea library."

Many practical suggestions in this very issue will be even more valuable to you next month or next year, when you are faced with the exact type of buying problem they are designed to solve.

Reading your own copy of PURCHASING keeps you up to date on just about everything you need to know as a successful purchasing executive. Here are a few of the vital topics you find covered in this issue and every issue of the original PURCHASING Magazine . . .

Purchasing Procedures . . . Inventory Control . . . Cost Reduction  
Value Analysis . . . Purchasing Research . . . Departmental Relationships  
Stores Operation . . . Materials and Products . . . Purchasing Equipment  
Packaging . . . Purchasing Policies . . . Traffic . . . Standardization

## How to Save 25% on New Subscriptions

Our special group plan enables everybody in your department to have his own copy. PURCHASING is a real bargain at \$4 a year — but you can save \$1 apiece on additional subscriptions.

Just list the names of everybody who should be getting the magazine and, if you list 4 or more, we'll bill you only \$3 apiece. Of course, each man must be active in purchasing . . . and not already a subscriber.

— — — — — **Mail This Form TODAY** — — — — —

Circulation Department, PURCHASING Magazine  
205 East 42nd Street, New York 17, N. Y.

Send PURCHASING to the following people, and bill the company at the group rate of \$3 a year for each. This comes to less than 12¢ per copy. (Less than 4 subscriptions billed at \$4 each.)

Name	Title	Address
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

Send Invoice to .....

.....  
Company Address

Attention of Mr. ....

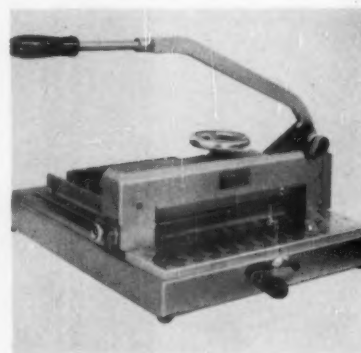
## Office Equipment

(Continued from page 186)

plates in 8 to 45 minutes, depending on size, with a maximum of 12¾" x 16".

The outstanding feature of this and other electronic engravers is the fact that a direct printing letterpress is produced immediately from reflection copy or transparency without the use of film.

Buyers of printing would do well to study electronic engravers and color scanners for possible application to their uses. They should also consider that many of these new developments have not reached the status of everyday trouble-free production. The impetus provided by buyer desires could easily be what's needed to get more printers to install this new equipment.



Practical advantages of the larger paper cutter are being built into manual office machines by Michael Lith Sales Corp., 145 West 45 St., New York 36, N. Y. The new model features: all metal frame; front wheel calibrator for moving automatically the back-gauge to divisions of 1/32 of an inch; cutting thickness is 3½" high; and ample working area. Write No. 55 on Place Mark Card—Page 32

Bulletin describing a new projector-printer is being offered by Keuffel & Esser Co., Hoboken, N. J. It describes an electrostatic system capable of making prints from 8½ x 11 to 34 x 48 inches from miniature negatives.

Write No. 56 on Place Mark Card—Page 32



At last - a ballpoint especially  
designed for office use!

**NEW  
EVERSHARP!**

*Lightning*

**BALLPOINT PEN**

**ONLY THE EVERSHARP  
LIGHTNING GIVES YOU  
ALL THESE FEATURES!**

⚡ Comfort grip for easier, effortless writing — prevents writing tension

⚡ Porous ball point for speedier, neater work — designed to write "non-skid"

⚡ Longer ink supply to cut refill expenses — nearly six inches of new high-density ink

⚡ "Pocket Proof" design — available without clip to discourage pilferage



**FREE SAMPLES!  
WRITE ON YOUR LETTERHEAD TO:**

EVERSHARP PEN CO.  
DEPT. B  
JANESVILLE, WISCONSIN

**CHECK STYLE DESIRED:**

- ☐ Non-refillable, no clip—39¢ retail
- ☐ Refillable, no clip—45¢ retail
- ☐ Refillable, with clip—49¢ retail
- ☐ All three

*For the best writing ever...it's* **EVERSHARP!**



## CONTROL AT UNITED

**"Moore forms help us  
complete reservations**

**5 times faster"**



M. L. Perry, Director of Reservations, United Air Lines

United Air Lines' automated reservation system has given the company tighter control of space on its Mainliner flights. The chances of over- or under-selling seats have been reduced; waiting list passengers get seats more often; there are fewer expensive "no shows." Other benefits to United include end-of-day statements of bookings, and more accurate and up-to-date summaries for analysis.

The System is built around a network linking all ticket agents with a single electronic computer in Denver. Booking information for round-trip or stop-over flights

is sent manually by teletypewriter from the booking office to Denver. This comes out as punched tape, coded to produce a punched card for each airport on the passenger's route. The cards are fed into the computer, which accepts the information and issues a status message further confirming the reservation. A new tape is made from the cards, which are then used for statistical reports to management.

Confirmation is sent, using the second tape, and printed automatically by teletypewriters in the down-line offices on a card. In the past, the facts were transcribed by hand. Machine printing has cut out this bottleneck. Personnel morale is better now that this boring job is gone. The chances for error are reduced. The cards are continuous forms, specially designed by Moore. They are United's control in print.

"The Moore man's advice on systems paperwork helped us a great deal when we set this system up," said M. L. Perry, Director of Reservations at United Air Lines. To find out how the Moore man can help you get the control your business needs, whatever its size, write the nearest Moore office.

MOORE BUSINESS FORMS, INC., Niagara Falls, N. Y.; Denton, Texas; Emeryville, Calif. Over 300 offices and factories throughout the U.S., Canada, Mexico, Cuba, Caribbean and Central America.



Build control with

# MOORE BUSINESS FORMS

For More Information Write No. 267 on Place Mark Card—Page 32





## NO IF'S...AND'S...or BUT'S — Verifax copies anything you write with !

Makes no difference if you write with ball point or fountain pen, pencil or crayon — a Verifax Copier takes all kinds of writing, typing, and printing in stride. Gives you 5 dry, easy-to-read copies in 1 minute for 2½¢ each . . . copies which are as accurate and long-lasting as the original.

See how Kodak's \$99.50 Verifax Bantam Copier outperforms other makes of copiers costing up to 4 times as much. Phone local Verifax Dealer (see "Yellow Pages" under duplicating or photocopying machines), or write Eastman Kodak Company, Business Photo Methods Division, Rochester 4, N. Y.

Prices quoted are manufacturer's suggested prices and subject to change without notice.

**VERIFAX BANTAM COPIER**  
shown above

**\$99<sup>50</sup>** Other models  
to \$425

**Kodak**  
TRADE MARK

**Verifax Copying** DOES MORE . . . COSTS LESS . . .  
MISSSES NOTHING



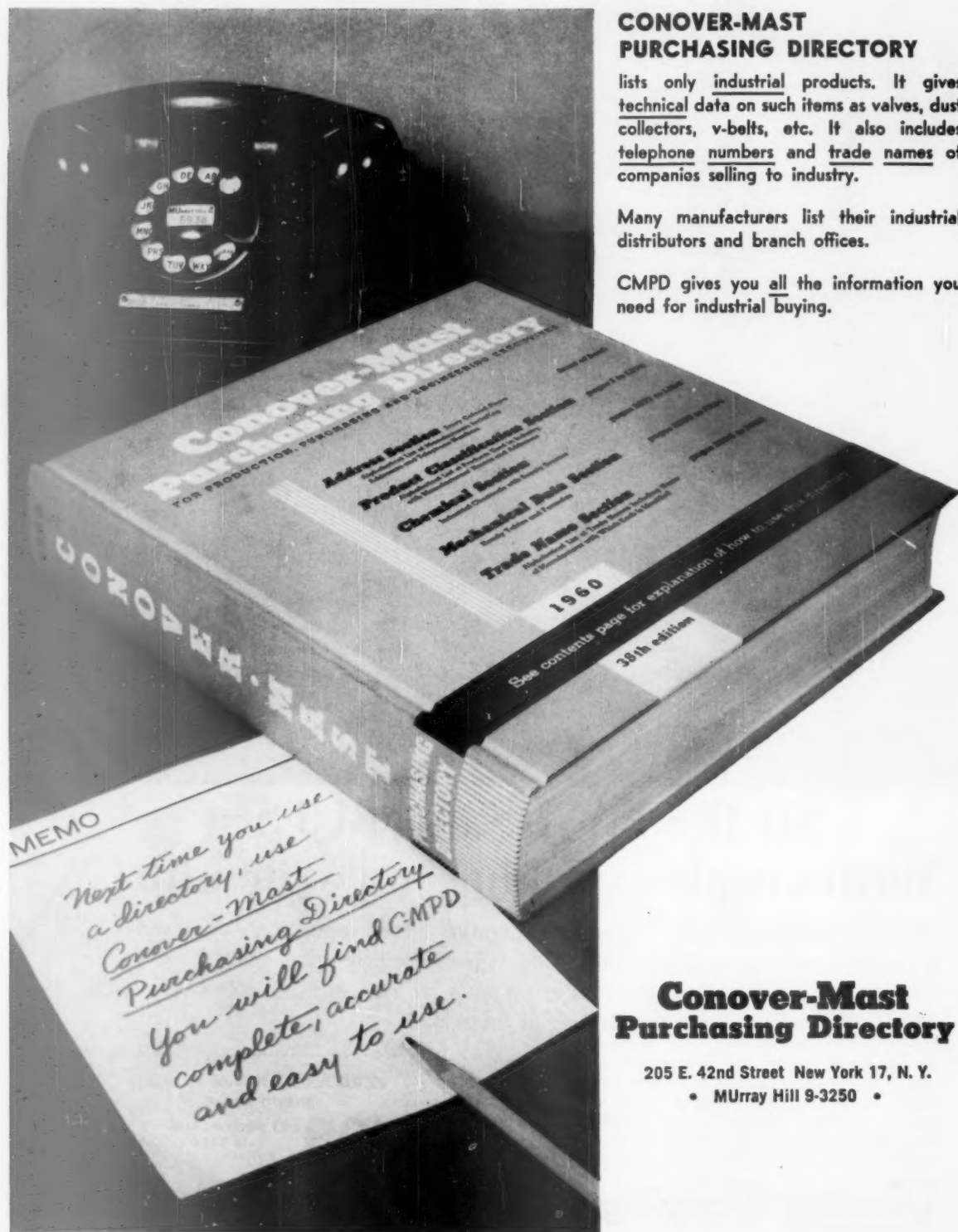
# Designed for **INDUSTRIAL** buying

## CONOVER-MAST PURCHASING DIRECTORY

lists only industrial products. It gives technical data on such items as valves, dust collectors, v-belts, etc. It also includes telephone numbers and trade names of companies selling to industry.

Many manufacturers list their industrial distributors and branch offices.

CMPD gives you all the information you need for industrial buying.



## Conover-Mast Purchasing Directory

205 E. 42nd Street New York 17, N. Y.

• MURRAY HILL 9-3250 •





GILBERT MINTZ, CONTROLLER of Colorforms.



FUTURISTIC EXTERIOR of Colorforms.

A NATIONAL SYSTEM is fast, accurate and efficient.

"Our *National* Accounting System saves us \$5,400 a year... returns 86% annually on investment." —Colorforms, Norwood, New Jersey

"Ever since we installed a National System, our accounting procedures have been vastly improved.

"For example, the speed of our National Accounting System saves us a great many hours each month. This sizeable time saving results in more current records, up-to-date monthly statements, and the elimination of overtime expenses. Another benefit—faultless accuracy. Formerly our records were compiled by hand. This old method frequently produced errors in addition and errors in entry. However, our

National Accounting Machine systematically records all entries... computes all totals. Still another service—our National System is extremely flexible. We use it for accounts receivable, accounts payable, payroll, and tax forms.

"Our National Accounting System saves us \$5400 a year... returns 86% annually on investment."

*Gilbert Mintz*

Controller of Colorforms.

Your business, too, can benefit from the many time- and money-saving features of a National System. Nationals pay for themselves quickly through savings, then continue to return you a regular yearly profit. National's world-wide service organization will protect this profit. Ask us about the National Maintenance Plan. (See the yellow pages of your phone book.)



TRADE MARK REG. U. S. PAT. OFF.

**National**

ACCOUNTING MACHINES

ADDING MACHINES • CASH REGISTERS  
NCR PAPER (NO CARBON REQUIRED)

**THE NATIONAL CASH REGISTER COMPANY, Dayton 9, Ohio**  
1039 OFFICES IN 121 COUNTRIES • 76 YEARS OF HELPING BUSINESS SAVE MONEY



# Office Equipment and Supplies



New material has now made practical the concept of room acoustical treatment. It is a development of **Pittsburgh Corning Corporation, One Gateway Center, Pittsburgh 22, Pa.** The material is acoustical cellular glass; the concept is distributed or "patch" absorption. Small holes of precise dimensions can be made to predetermined depths; cavities with extremely accurate dimensions can be designed into the material. Spacing of the units and the number used will vary widely, depending on the geometry of the room and the effect desired. It is important only that the units be separated to allow for maximum efficiency of absorption.

Write No. 57 on Place Mark Card—Page 32



New 3-wire **Electrostrip** provides electrical outlets anywhere along its length. It is manufactured especially for use with appliance and office machines by **Bulldog Electric Products Division, I-T-E Circuit Breaker Company, Box 177, Detroit 32, Mich.** It is made of new extruded polyvinyl chloride and is rated 20 amperes, 125 volts AC.

Write No. 58 on Place Mark Card—Page 32

New silk screen stencil duplicator is being distributed by **Mercury Business Machines Co., 900 Broadway, New York 3, N. Y.** It is electrically operated and the inking device consists of a self-propelling pressurized ink can coupled to, and controlled by, an ingenious inking pearl of fine pipes and wire-thin nozzles. For better ink distribution the new machine is equipped with two simultaneously oscillating and rotating distributors.

Write No. 59 on Place Mark Card—Page 32



Office machine cabinet for use with most reproduction equipment has been announced by **Lyon Metal Products, Inc., 3 Plant Avenue, Aurora, Ill.** It has one adjustable shelf and a built-in lock for safety storing supplies. The pan-type sliding tray mounted directly under the top may be inverted for use as additional working space. The cabinet comes equipped with glide-type feet, but casters are also available.

Write No. 60 on Place Mark Card—Page 32

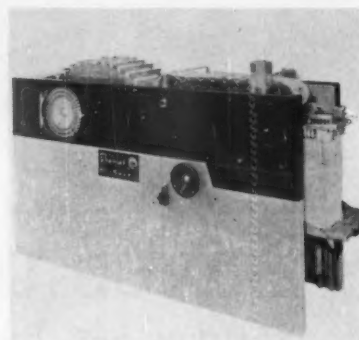
Precision loading device, designed for fluid duplicating applications requiring master loading and for highly repetitive systems work has been announced by **A. B. Dick Company.** Two tapered adjustable guides provide exact positioning of the master. Installation does not require the removal of any parts. It is attached with a screwdriver to the tie-rod above the master clamp.

Write No. 61 on Place Mark Card—Page 32



High Fidelity, high speed, all transistorized, one battery operated pocket tape recorder has been introduced by **Mohawk Business Machines Corp., 944 Halsey St., Brooklyn, N. Y.** Playback can be heard through earphones or a companion amplifier. It also has a full set of accessories for confidential recordings.

Write No. 62 on Place Mark Card—Page 32



Several innovations intended to improve the operation of a fully-automatic, 50-station collator have recently been completed. The machine is a product of **Thomas Collator Industries, Inc., 100 Church St., New York 7, N. Y.** Controls have been repositioned for ease of operation, and smoother paper flow has been assured by simplified guides that receive sheets earlier in the collating cycle. Other features include: push button programmer; a miss and double detector that automatically points out the source of error; and an accessory stitcher that automatically staples each collated set.

Write No. 63 on Page Mark Card—Page 32



■ One of the many extras that make GF office furniture so much better



## How much "mileage" will you get?

**THAT OFFICE CHAIR OF YOURS** travels a lot farther than you might think in the course of a year . . . back and forth, side-ways, in circles. Actual estimates by our demon statisticians indicate that  $8\frac{1}{4}$  miles a year would be an average figure.

**THE WHEELS YOU TRAVEL ON** are your chair casters. The body you ride in is your chair frame. Both take a beating. That's why we "torture-test" everything from chair frames

and seats to casters. We do it so you can be *sure* of getting extra "mileage" and long life when you buy GF Goodform office chairs. The General Fireproofing Co., Dept. Y-16, Youngstown 1, Ohio.

**GENERAL**  
BUSINESS FURNITURE  
**FIREPROOFING**





# Educational Buyers Hold Convention in Pittsburgh



The registration desk was kept busy as 396 members of the National Association of Educational Buyers arrived to take part in more than 20 general sessions and workshops. 236 colleges and universities were represented at the convention, held at the Pittsburgh Hilton.



Bert C. Ahrens, executive secretary of the N.A.E.B., straightens out a ticket problem with receptionist Nancy Koontz. Miss Koontz is secretary to Edward J. Davis, purchasing agent for the University of Pittsburgh.



Ahrens conducts the 20th annual Question Box—a convention feature where questions submitted by members are answered from the floor by anyone familiar with the problem. Subjects covered included purchasing of printing, chalk boards, and furniture; and procedures for receiving, invoicing, and stock control.



Host committee chairman James D. Sands (center), Carnegie Tech, discusses program with incoming association president, Bruce J. Partridge. Ed Davis of the host committee looks on.





Association officers attending were: (l. to r.) Vice President Elmer Jagow, Knox College; Vice President George Schwab, Louisiana State Univ.; James Ritterskamp, Washington Univ., a director of the affiliated Educational and Institutional Cooperative Service, Inc. (a central buying group); Treasurer G. Edward Nealand, M.I.T.; Outgoing President Carl A. Donaldson, Univ. of Nebraska; Incoming President Bruce J. Partridge, Univ. of Delaware; Vice President William L. Christensen (partly hidden), Univ. of Utah; and Mr. Ahrens. →

Between sessions, product exhibits were well attended. Over 150 vendors displayed their wares.



← Subject to much intensive study was the Forms Board, displaying how purchasing paperwork is handled at various institutions. It was prepared by Fred A. Spurgat, business manager, Concordia Teachers College.



Consulting Engineer Fred C. Wood addresses a session on material handling and stores technique.



← Elmer F. Andrews, director of purchasing of Allegheny-Ludlum Steel Corp., addresses one of the general sessions. He spoke on "Purchasing's Position in the Decade of Abundance."



The subject of automation was one of the best attended workshops. Led by William C. Meyer, purchasing agent, Westinghouse Electric Corp., the panel included (l. to r.): Wallace R. Rogers, Cornell; D. Francis Finn, Purdue; Meyer; and G. Edward Nealand, M.I.T.





## Association News

Through the eye of PURCHASING'S Camera

### Purchasing Leaders Speak At D. C. Seminar



George A. Fadler, Westinghouse Electric Corp., offered tips on "Bidding Procedures and Selection of Vendors."



L. B. Whitehouse, Jr., Morton Mfg. Co., gave some probing answers to the question "Value Analysis—Why?"



C. E. Mack, Air Force Institute of Technology, discussed "Personal Skills For Progress In Materials Management."



L. D. Miles, General Electric Corp., "Mr. V.A."—gave an expert's view on "Value Analysis—How?"



**EIGHTH DISTRICT** — Discussing purchasing problems informally at the recent seminar held at Cornell University are: (left to right) Vic Pooler, Carrier Corporation; Walter E. Willets, Conover-Mast Publications, Inc., chairman of Eighth District Professional Development Committee; Dr. Howard T. Lewis, Harvard Business School; and Dr. Herbert Van Schaak, College of Education of Oswego.

**FLORIDA**—Government and industry got together for an informal session during the recent two-day meeting of the Purchasing Agents Association of Florida. From left to right are: G. F. Jones, Escambia Chemical Corp.; Dan Berry, City of Pensacola; D. W. Sanderson, Jr., Palm Beach County; and L. E. Bickel, Chemstrand Corp.







## stainless steel

No other metal has the strength, beauty and versatile qualities that serve you so well today and promise so much for tomorrow.

**There is nothing like  
stainless steel for HOMES  
AND HOME PRODUCTS**

McLouth Steel Corporation,  
Detroit 17, Michigan

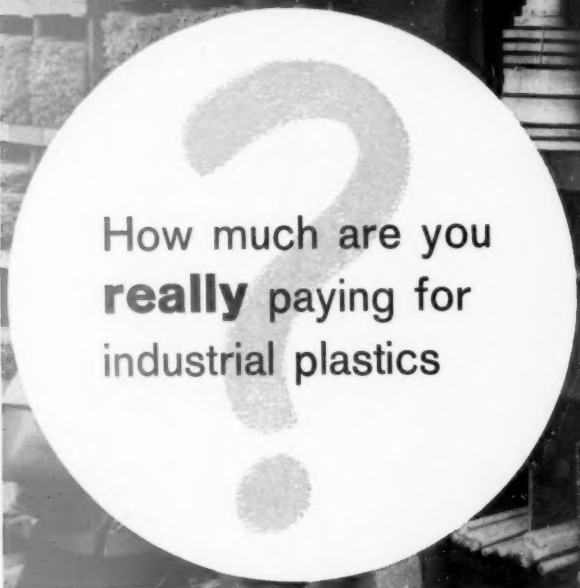
*Manufacturers of high quality  
Stainless and Carbon Steels*

Look for the **STEELMARK**  
on the products you buy.



**McLOUTH STAINLESS STEEL**





How much are you  
**really** paying for  
industrial plastics



- ... Nylon—rod, tubing, tubular bar, strip, plate, disc
- ... TEFLON† TFE—rod, tubing, spaghetti tubing, tape, sheet, thin wall tubing
- ... FLUOROSINT\* TFE fluorocarbon mill shapes and molded parts
- ... NYLAFLON® Flexible Nylon Pressure Tubing and hose
- ... Q-200.5 Cross-Linked Polystyrene—rod and plate
- ... K-51 Chlorinated Polyether—rod, tubular bar, strip
- ... Polycarbonate resin—rod, plate, disc, tubing
- ... NYLATRON® GS Nylon Molding Powders
- ... NYLASINT® Finely Divided Nylon cold pressed and sintered parts
- ... CORVEL® Fusion Bond Finishes
- ... WHIRLCLAD® Coating System

\*Trademarks of the Polymer Corporation  
†Du Pont Trademark

For More Information Write No. 273 on Place Mark Card—Page 32

When a critical nylon bearing fails or a TFE insulator fails in service, the responsibility could be yours . . . if you specified the original stock shapes.

In many cases, internal voids and flaws in nylon and other plastic shapes don't show up until it's too late . . . until end-products fail or after expensive rejects start piling up. And how do you put a price tag on these losses in time, material, customer good will and your own reputation?

You can prevent such losses by buying only plastics of known internal quality and uniformity. And you get them from Polymer.

Ultrasonic testing, a new exclusive Polymer quality control, guarantees you this uniformity. It quickly detects internal flaws which ordinarily would pass even the closest inspection.

That's why, when you specify POLYPENCO you can be sure you get plastics with constant electrical and physical properties so necessary for end-product reliability and efficient waste-saving production. Remember this next time you compare industrial plastic "prices". Quality makes the important difference.

Unmatched POLYPENCO quality and engineering services are available coast to coast. Call or write today for fast delivery or help when you need it.

## The Polymer Corporation

Reading, Pa.

*Divisions & Subsidiaries*

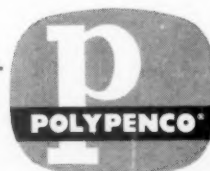
THE POLYMER CORPORATION OF PA.

HALEX CORPORATION

MOLDING RESINS Division

WHIRLCLAD Division

EXPORT, POLYPENCO, INC., U.S.A.



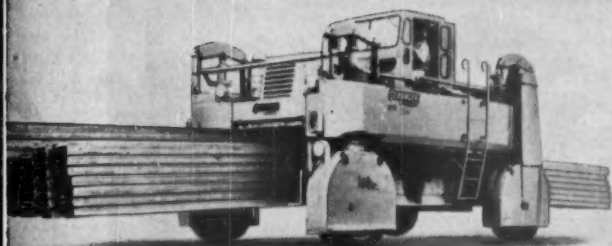
For More Information about an on facing page  
Write No. 274 on Place Mark Card—pg. 32→

PURCHASING



# TOWMOTOR-GERLINGER

*offers you three complete  
capital-saving services!*



## 1 YOU LEASE *without down payment!*

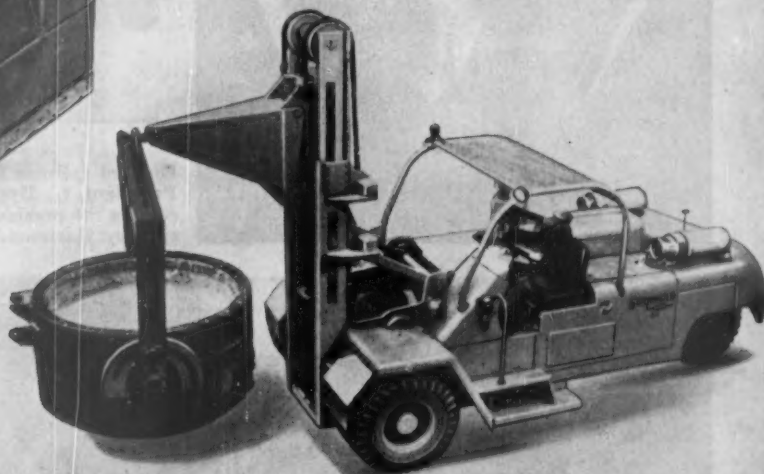
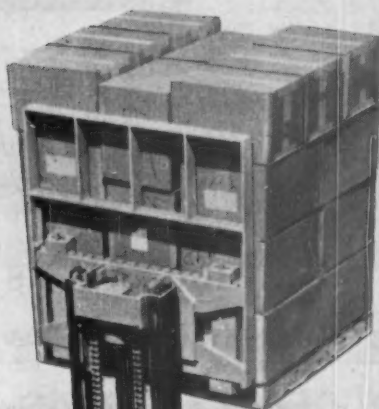
You don't make a *down payment* when you use the Towmotor-Gerlinger Lease-A-Truck Plan. You put T-G equipment to work on a continuous, year-'round basis. You just make a small monthly payment—paid out of savings the equipment produces.

## 2 YOU RENT *without cash outlay!*

You don't tie up working capital when you *rent* Towmotor-Gerlinger fork lift trucks and material carriers. You put them to work immediately. You start cutting handling costs immediately. Your only cash outlay is one small monthly charge.

## 3 YOU BUY *and save as you pay!*

You don't pay cash for Towmotor-Gerlinger equipment when you use our low-cost Time Payment Plan. You make reasonable monthly payments. Low interest rates make it easy. Handling economies consistently pay the monthly cost many times over.



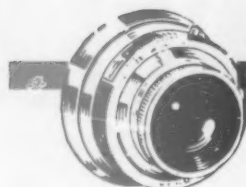
Complete factory-supervised maintenance can be included in *any* of the above plans! For complete information, write Towmotor-Gerlinger Rental Division, Towmotor Corporation, Cleveland 10, Ohio.



FORK LIFT TRUCKS, CARRIERS AND TRACTORS SINCE 1919

Gerlinger Carrier Co. is a subsidiary of Towmotor Corporation





## Association News

Through the eye of PURCHASING'S Camera

**NEW YORK**—James M. McTavish, Commonwealth Services, Inc., described a cost reduction case history at a recent forum. Ten participants reported how a change in material or buying method resulted in cost savings.



### The Salesman's View Presented to Baltimore PA's



Howard Geiwitz (left), program chairman, joined President G. Byrd Dougherty (center), in welcoming the president of the Sales Executive Council, Roy Hartman, to the recent meeting.



A panel of salesmen discussed "A Salesman's Portrait of A Purchasing Agent." P.A.'s turned out in force to hear it. Shown here are: (l. to r.) Franke Yeagle, Franklin Balmar Corp.; Charles White, H. L. Reynolds Co.; C. Laur, Baltimore Transfer Co.; R. C. Syvert, Calvert Distilling Co.; and R. Driver, Smoot Sand and Gravel Co.





**WOLVERINE TUBE**  
DIVISION OF  
**Calumet & Hecla, Inc.**

DEPT. B, 17250 SOUTHFIELD RD., ALLEN PARK, MICH.  
Manufacturers of Quality Controlled Tubing

## **York counts on WOLVERINE TRUFIN<sup>®</sup> for Quality and Maximum Heat Transfer**

In Atlanta, Ga., customers of Rich's Department Store shop in air conditioned comfort—thanks to air conditioning equipment manufactured by York Division of Borg-Warner Corporation, York, Pennsylvania.

And, like countless other air conditioning installations made each year by York, this one too, uses integrally finned Wolverine Trufin Type S/T condenser tubes in its heat exchangers.

Of Wolverine Trufin and its ability to increase heat transfer capacity, York engineers say, "Quality materials are as necessary as the skilled workmanship that goes into every York product. We find that Wolverine Trufin's extended surface gives us a good ratio of inside to outside heat transfer. It permits the maximum amount of heat transfer with a minimum of space while maintaining outstanding dependability."

If your company requires nonferrous tubing for heat transfer—or any other purpose—talk to Wolverine Tube before placing your next order. Like York Division you'll find the kind of quality and dependability that meets your highest expectations. Write, too, for your copy of the Wolverine Tubemanship Book.

J-9785

PLANTS IN DETROIT, MICHIGAN AND DECATUR, ALABAMA • SALES OFFICES IN PRINCIPAL CITIES





# MODERN MAINTENANCE

## IS PROFITABLE MAINTENANCE



R. L. Kirkpatrick, Manager, Maintenance Sales, Westinghouse Electric Corporation

### Can You Afford to Do Your Own Electrical Repair Work?

There is a trend for industry to do less and less of its own repair work on production equipment and devote more time to preventive maintenance. There appears to be two major reasons behind this trend: (1) the ever-increasing demand for greater operating reliability of all production equipment, and (2) the high cost of operating in-plant repair facilities.

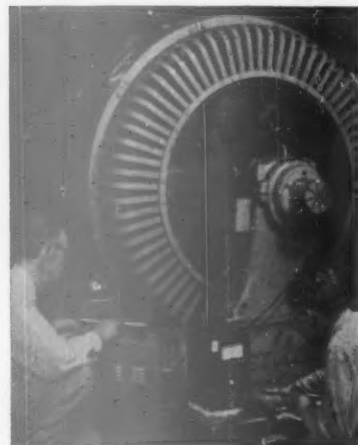
Maintenance Managers are primarily concerned with increasing the operating reliability of all production equipment to cut down time. The high costs of down time are well known . . . ranging from five dollars to more than one thousand dollars a

minute. Maximum reliability can be built into repaired equipment. Modern repair plants are specialists in this field. These plants have the very latest facilities and factory-trained repair technicians. They are thoroughly equipped to handle repairs on all sizes of electrical equipment. Each job is carefully engineered to solve the exact problem that caused the original failure . . . whether electrical, mechanical, or both. Most of these plants guarantee their work. On rewound motors, for example, they provide a one-year guarantee . . . the same as on a new motor. As a matter of fact, when these modern repair plants return your electrical equipment it is often better than when new. They employ the latest

## Westinghouse maintenance service

### Motor life more than doubled

A pump motor exposed to considerable acid and moisture in a pulp



Voltage leakage test of large d-c motor in processing plant—one of many tests in the Westinghouse contract plan augmenting the company's preventive maintenance program.

and paper mill had previously required rewinding on an average of three times per year. Westinghouse maintenance service was called on to solve this motor problem. Super COILIFE\* epoxy encapsulation was provided as insulation. After nine months, motor is still operating satisfactorily. The same company has since sent two additional motors for rewinding and processing with Super Coilife. \*Trade-Mark

### Westinghouse maintenance proves fast, dependable

A 2850-hp induction motor on a river dredge, operating continuously at high overload, recently required fast and highly capable maintenance. The call came to the Westinghouse engineer at 1 A.M. The motor had lost three coils. Despite dense fog, regional cold and confusing levee roads (accord-

ing to the report), the coils were removed and the motor was back in service the same morning. Arrangements were made to order mechanical parts and Thermalastic®-insulated coils for a complete overhaul, performed by Westinghouse at a later date. The motor now is better than when the customer originally purchased it in 1926.

### Costly down time eliminated with scheduled inspection

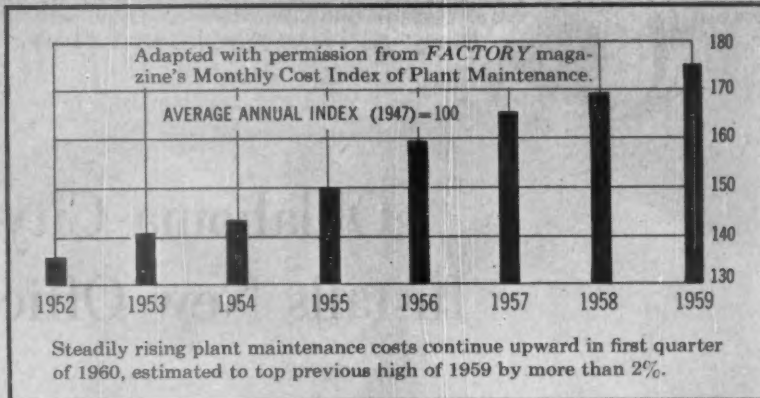
"In-service" failures of large motors operating processing equipment of a large Midwestern company were a serious production problem to Maintenance Management. Westinghouse recommended an annual inspection and testing program to prevent such breakdowns. Field Service Engineers have conducted thorough



developments in materials and techniques. Up-to-the-minute instruments are used to thoroughly test all repaired equipment before it is returned to you. In short, a modern repair plant does everything possible to build maximum operating reliability into your production equipment.

The expert services of a modern repair plant are also available around-the-clock, seven days a week. These specialists are ready to provide service in your plant as well as in their own on a planned or emergency basis. You pay for these services only when you use them. There are no continuing overhead costs to worry about.

This brings us to the second reason for this trend . . . the high cost of operating in-plant repair facilities. In any production process there are bound to be peaks and valleys in the amount of repair work required. This results in disjointed working schedules and expensive overtime. Over-



head costs go on regardless of the amount of work being done. There is seldom an even flow of repair work, so that it is virtually impossible to staff the repair shop to meet the varying requirements and emergencies. In addition, major capital expenditures are periodically necessary to keep up to date with testing and repair equipment, materials and the latest techniques.

By having outside experts handle your repair work you can cut repair costs, improve performance reliability, extend the life of equipment, have more square feet for your own production needs and more people available for production and preventive maintenance work.

**Can you afford to do your own electrical repair work?**

## assures production reliability

mechanical and electrical tests of the machines over the past five years during the annual vacation shutdown periods. Each year they have made recommendations to the company as to the necessary maintenance work to be performed. The contract has completely elim-



Super Collife epoxy encapsulation protects the windings of this 10-hp motor from severe acid and moisture conditions which previously caused repeated failure.

inated large motor down time.

In addition to a basic repair service, Westinghouse offers you a score of extra benefits. The repaired equipment will often be better than when new, because Westinghouse actually rebuilds equipment, investigates every opportunity to use up-to-the-minute developments such as exclusive Westinghouse insulations . . . Thermalastic, Super Collife, Bondite. At the same time your equipment is being repaired, it can be uprated mechanically and electrically . . . with features of the most recent equipment on the market. Other Westinghouse pluses include complete electrical and mechanical testing equipment, trained specialists for every phase of the job, inventive engineering—difficult to match anywhere.

Westinghouse is providing a

comprehensive maintenance and repair service for thousands of plants today and for all types and classes of a broad range of electrical and steam equipment. We invite you to visit any of the 42 Westinghouse modern repair plants. Your Westinghouse representative will be glad to make arrangements for your visit. Take that opportunity to discuss the ways in which Westinghouse can help you prepare a modern maintenance program that will save you money . . . no matter what your in-plant costs are today!

J-95214

**YOU CAN BE SURE...IF IT'S**  
**Westinghouse**

TUNE IN WESTINGHOUSE CBS TV-RADIO COVERAGE  
PRESIDENTIAL CONVENTIONS, JULY 10-29

For More Information Write No. 276 on Place Mark Card—Page 32





## Association News

Through the eye of PURCHASING'S Camera

### Oklahoma City Installs New Officers



Recently elected officers of the Purchasing Agents Association of Oklahoma City are: (l. to r.) Ira M. King, Pan American Petroleum Corp., alternate national director; W. L. Carey, Tinker A.F.B., first vice president; R. J. Hood, Republic Supply, president; Charles H. Harville, Oklahoma City Board of Education, national director; and Kenneth R. Wiggins, Oklahoma State Highway, secretary.



Sales representatives of the Oklahoma Gas & Electric Co. discussed developments in lighting. They are: (l. to r.) W. H. Mapes, Roy Jackson, and R. B. Gow.



A large group of members turned out to see new officers installed and to hear three salesmen speak at a recent meeting.

For More Information about ad on facing page  
Write No. 277 on Place Mark Card—pg. 32→  
PURCHASING






**YOU GET BIGGER SHAFTS IN THE SAME SPACE  
WHEN YOUR "SPECS" READ HYATT**

To gain more space, simply eliminate the separable race from a Hyatt Hy-Roll bearing. For Hyatt rollers will operate directly on any shaft or bore that you've hardened and ground to bearing specifications. But, first be sure you're using Hy-Roll bearings. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

**HYATT** *HY-ROLL BEARINGS*

Replacement bearings available through United Motors System and its authorized bearing distributors.

IN ROLLER BEARINGS HYATT IS THE WORD FOR  RELIABILITY





A REPORT FROM ALCOA





## To the purchasing agent who must decide on **COPPER WIRE AND CABLE**

**How one p.a. solved an emergency in 63 hours by knowing his cable facts:**

One Friday afternoon, a manufacturer in Seattle suddenly had an equipment breakdown. He needed 500 feet of 5-KV copper cable *fast*.

At 5:05 he caught his Rome representative just leaving the office. Rome man called his home office in Rome, N. Y. By 11:00 that night the order had been assembled from Rome's stock. By 7:30 Monday morning the cable was *in Seattle and on the job!*

This was a case of a purchaser who knew what he needed to know about buying copper wire and cable.

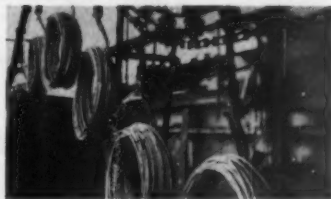
1. He knew where to turn when he needed *service* that might cause other suppliers to pale.
2. He also knew that *availability* is rarely a problem, because of Rome's stocking program and network of 500 distributors.
3. He knew of Rome's *delivery* plan—close teamwork that puts every foot of cable where it's needed, when it's needed.
4. And he knew that Rome's *prices* are competitive.

### **Your turn next?**

Next time you are asked to buy wire and cable, be sure you have all the facts at your finger tips—and a supplier who comes through with the goods.

Talk it over with your Rome Cable distributor now. Or write us for Bulletin RCP 100, "Guide to Representative Wire, Cable and Conduit." Rome Cable Division of Alcoa, Dept. 14-60, Rome, N. Y.

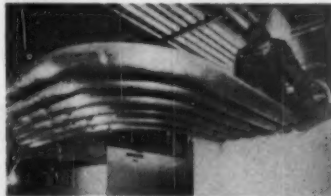
**NOW YOU CAN GET  
ALL 4 FROM ROME**



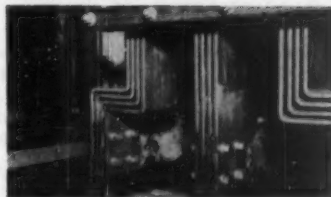
Copper wire and cable



Aluminum wire and cable



Aluminum conduit



Aluminum bus conductor

# **ROME CABLE**

DIVISION OF **ALCOA**





## Association News

Through the eye of PURCHASING'S Camera



**CHICAGO**—A Ladies' Night crowd enjoyed Miss Ilka Chase's comments and excerpts from some of the gayer, modern writers. Another highlight of the recent meeting was a meritorious service award to Miss R. Sterner of the Association's office. J. C. Frehner, president, presented Miss Sterner with a wristwatch in appreciation of 20 years good and faithful service.



**GRAND RAPIDS**—New officers of the association are: (left to right) Homer Barber, Packaging Corp. of America, president; Wm. M. Klaassen, Grand Rapids Supply Co., treasurer; Miss Betty Rau, McInerney Spring & Wire Co., secretary; John Vander Veen, Sackner Products Co., vice president; and Kenneth Van Heulen, A. L. Holcomb Co., national director.

**SYRACUSE**—Four members of the Association discuss 1960 business before the start of a recent meeting. From left to right they are: Edwin C. Drew, Solvay Process division of Allied Chemical Corp.; Maurice D. Low, Crouse Hinds Co.; Joseph M. Austin, Oneida, Ltd., and A. W. Hoffman, Brewer-Titchener Corp.

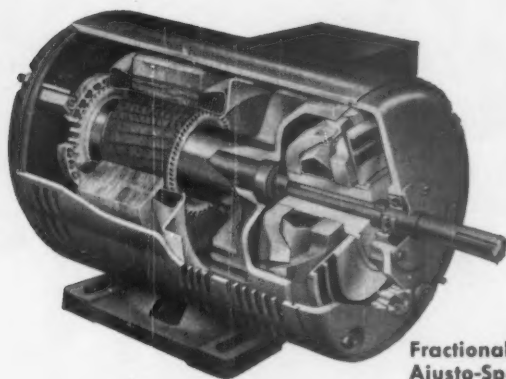


For More Information about ad on preceding page  
←Write No. 278 on Place Mark Card—pg. 32



# Bring Your Speed Control Problems to

## EDDY-CURRENT HEADQUARTERS



Fractional HP  
Ajusto-Spede Drive



**Let Our Years of  
Speed Control Experience  
Go to Work for You!**

**30** years ago Dynamatic pioneered the utilization of eddy-currents in industrial rotating equipment. Today, the Dynamatic Division of Eaton Manufacturing Company is the recognized leader in the development and production of eddy-current drives, couplings, brakes, and dynamometers—equipment which is solving production problems in every major industry.

In speed control applications, Eaton-Dynamatic Eddy-Current Equipment offers many exclusive advantages—stepless adjustable speeds from AC power, rapid response, wide speed range, quiet operation, low power loss, low maintenance cost, remote control, simple electronic or transistorized control.

Dynamatic Eddy-Current Equipment is available in sizes from 1/4 hp Ajusto-Spede Drives to heavy-duty couplings rated up to 20,000 hp—and larger.

When you have a speed control or drive problem, bring it to "Eddy-Current Headquarters"—we can provide a simple, economical solution.

*Write for Illustrated Descriptive Literature*

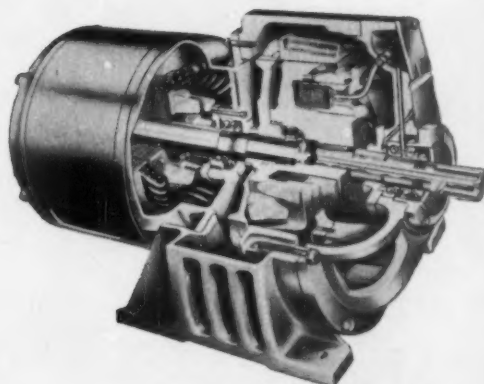


# EATON

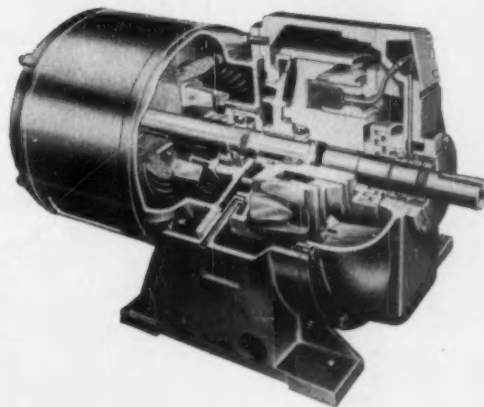
— DYNAMATIC DIVISION —  
**MANUFACTURING COMPANY**  
3122 FOURTEENTH AVENUE • KENOSHA, WISCONSIN

For More Information Write No. 279 on Place Mark Card—Page 32

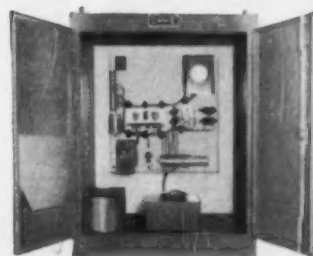
JUNE 20, 1960



Air-Cooled Ajusto-Spede Drive



Liquid-Cooled Heavy-Duty Drive



Magnetic Amplifier (Transistorized)  
Control

For More Information about ad on following  
page Write No. 280 on Place Mark Card—pg. 32→



# integrated CRUCIBLE steel service

SALES-SERVICE ENGINEER  
(TOOL STEEL SPECIALIST)

TRUCK DRIVER

WAREHOUSE SAW MAN

INVENTORY  
SPECIALIST

SALES-SERVICE  
ENGINEER  
(ALLOY STEELS  
SPECIALIST)

METALLURGIST

WAREHOUSEMAN

ACCOMMODATION SERVICES

SALES-SERVICE  
ENGINEER  
(STAINLESS STEEL  
SPECIALIST)

SWITCHBOARD OPERATOR

SALES-SERVICE ENGINEER  
(ALL PRODUCTS)

TELETYPE OPERATOR

INSIDE ACCOUNT SALESMAN

Local Crucible personnel provide service in depth, ranging from quick reports on steels available to expert assistance with metal working problems.

Average warehouse staff is backed up by Crucible Metallurgists who, although located at mills, will travel.



# maintains broad range of local customer services

*— ranges from in-stock deliveries to metallurgical research*

Here's service in depth, made possible by Crucible's integrated operation. It starts with in-stock deliveries of the steels you need and goes on to provide complete technical assistance for engineers, production, toolroom and maintenance men. And the entire service is available from all of Crucible's 32 warehouses —

(1) *Deliveries from local stocks* of 16,000 specialty steel items, including all grades, shapes and sizes.

(2) *Basic specialty steel data* — complete breakdowns on properties, characteristics, as well as machining and fabrication details. (Warehouse account salesmen can frequently recommend the best steel for the end use.)

(3) *Metalworking assistance* with unusual machining and fabricating problems — by trained, experienced sales-service engineers who specialize in tool steels, stainless, alloys.

(4) *Metallurgical research* — help in developing steels for tomorrow's more exacting applications from Crucible's metallurgists, who will come to your plant on call.

Here's what one purchasing agent recently had to say about this over-all service: "We need lots of help with new steels — ones we haven't used before. The reason we rely on Crucible warehouses is because their men know the answers — or can get them for us quickly."

Why not simplify your own specialty steel purchasing problems by taking advantage of this integrated service? *Crucible Steel Company of America, Dept. PF13, Pittsburgh 30, Pa.*

## STOCK LIST

Keeps you up-to-date on local stocks of specialty steels. Just ask the Crucible salesman to place your name on the regular mailing list.

One Source  
For All  
These Steels



Crucible metallurgists will come to your plant, if necessary, to help engineers use new steels or metals like titanium.



Sales service engineers' experience with fabricating, machining problems can solve toolroom and production problems.



Truck drivers speed orders for over-night delivery to you — or earlier if your order is an "emergency."

**TOOL STEELS** — Water, oil, air hardening, shock resisting, hot work, plastic and die casting steels in all forms, including bars, sheets, plates, drill rod, hollow bars, forgings and flat ground stocks

**HIGH SPEED STEELS** — Crucible's famous "Rex"® steels: Rex Thrift Finish rounds, hot rolled and cold drawn flats and squares, drill rod, forgings, sheets, plates, and tool bits

**STAINLESS STEELS** — Bars, sheet, strip, wire, cold heading wire, metalizing wire, plates, angles

**FREE MACHINING STEELS** — Crucible Max-el® rounds, hexagons, plates and brake die steel

**ALLOY STEELS** — Bars, billets, strip and sheet

**COLD ROLLED CARBON SPRING STEELS**

**DRILL STEELS** — Hollow and solid drill steels

**ALUMINUM EXTRUSION DIE STEELS**

**HOLLOW TOOL STEEL**



Teletype operators get direct reports on quantities available everywhere in the warehouse system — from Crucible's inventory-control computer room.

**HARD FACING ROD**

**PLASTIC MOLD STEELS**

**PERMANENT MAGNETS**

*— and many others*

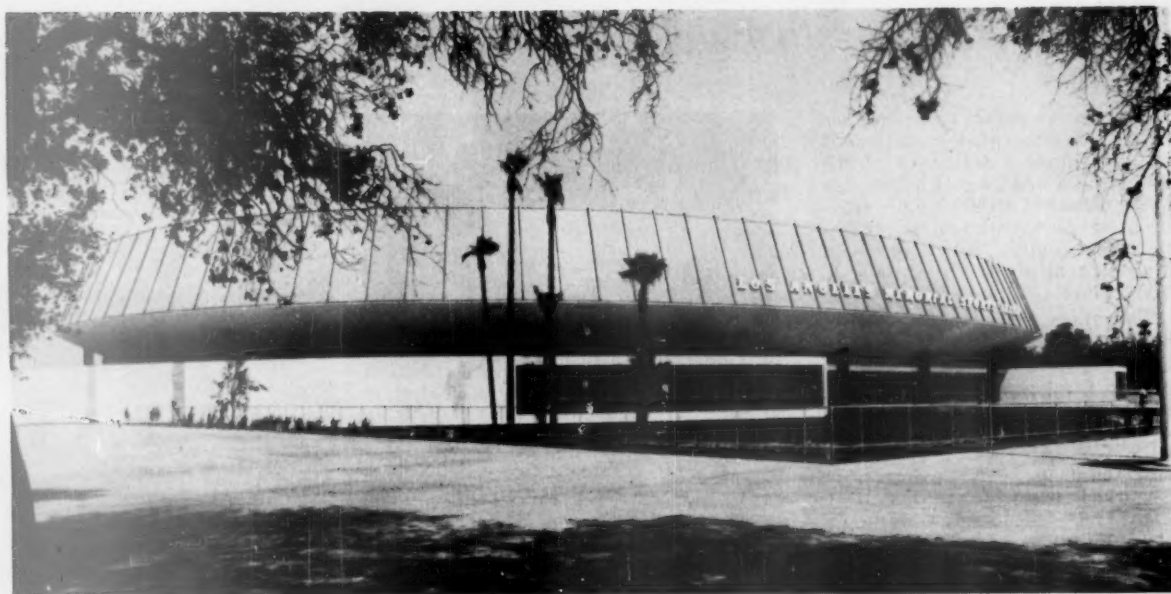
# CRUCIBLE

# STEEL COMPANY OF AMERICA

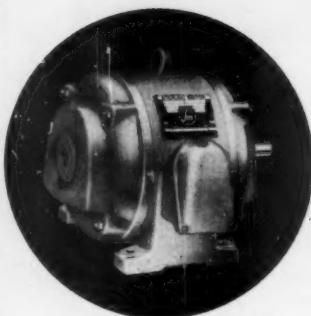
Branch Offices and Warehouses: Atlanta • Baltimore • Boston • Buffalo • Caldwell, N. J. • Charlotte • Chicago • Cincinnati • Cleveland • Columbus • Dallas • Dayton • Denver • Detroit • Erie, Pa. • Grand Rapids • Houston • Indianapolis • Los Angeles • Miami • Milwaukee • Minneapolis • New Haven • New York • Philadelphia • Pittsburgh • Portland, Ore. • Providence • Rockford • Salt Lake City • San Francisco • Seattle • Springfield, Mass. • St. Louis • E. Syracuse • Tampa • Toledo • Tulsa



# FOR THE NATION'S MOST MODERN SPORTS ARENA... MODERN ELECTRIC MOTORS BY STERLING!



Equally suitable for sports events or convention meetings, the Los Angeles Memorial Sports Arena, site of the 1960 Democratic National Convention, is one of the nation's newest and largest public assembly buildings. Designed by Welton Becket and Associates, architects and engineers, for the Los Angeles Coliseum Commission, the Arena can accommodate up to 22,400 seats depending upon the type of event being held.



Because comfort is a vital factor in the use of the Sports Arena, every effort was made to insure that the air conditioning throughout the building would be unequalled in efficiency. Three basic air handling systems and two piping systems provide the necessary flexibility for the many variations in air conditioning loads that are required.

54 STERLING Electric Motors were selected to power the pumps, fans and air handling units. These alternating current, squirrel cage, drip-proof Sterling drives, ranging from 1 hp to 75 hp, provide quiet and dependable service...service that has made Sterling the name to remember for modern electric drives.

## Only STERLING Multi-Shielded A.C. squirrel cage motors provide all these advantages:

- Patented herringbone rotor assures quiet operation.
- Splash resistant enclosure provides many times the protection required by NEMA standards...protects against dripping liquids and falling objects.
- Sterling Multi-Shielded protection also incorporates sealed leads and terminal box, double-shielded pre-lubricated ball bearings and labyrinth seal on output shaft...for long, trouble-free service life.
- Direct through ventilation results in cooler motor operation and prevents overheating.
- Mechanical and electrical modifications are available for virtually any special application.

For additional information about the unmatched advantages of Sterling Multi-Shielded Motors for your application, write for free copy of Bulletin 194.



# STERLING

ELECTRIC MOTORS, Inc.

5401 TELEGRAPH ROAD • LOS ANGELES 22, CALIFORNIA

Offices and stocks in all principal cities. Over 400 distributors throughout the country to serve you.



For More Information Write No. 281 on Place Mark Card—Page 32

For More Information about ad on facing page  
Write No. 282 on Place Mark Card—pg. 32→  
**PURCHASING**





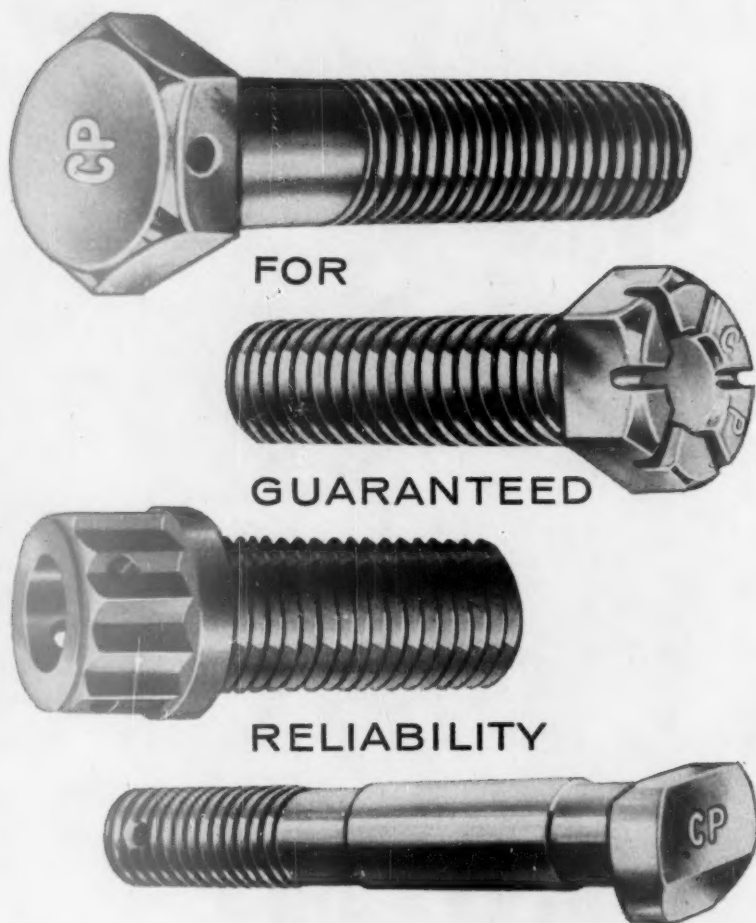
Your order can be this small. One self-lubricating bearing, custom made. You'll get the same prompt, interested service as you would if you ordered Bound Brook bearings by the ton.

---

**BOUND BROOK**

Bound Brook Oil-less Bearing Co., Bound Brook, N. J.  
Pioneer in Powder Metallurgy Bearings and Parts.  
*Plants at Bound Brook, N.J. and Sturgis, Mich.*





FOR

GUARANTEED

RELIABILITY

CHECK WITH

# chandler

FOR PRECISION CAP SCREWS

You can depend on Chandler for quality, reliability and service! Competent Chandler engineers analyze your specific fastening problem . . . follow your order through each stage of production . . . schedule deliveries to meet your requirements. At Chandler, men, materials and machines are efficiently combined in a modern government-approved plant to produce reliable fasteners that meet military and industrial standards. And Chandler's complete laboratory *guarantees reliability* . . . provides chemical and metallurgical control as well as tests of tensile, yield, creep and stress rupture. If you require precision cap screws or bolts, check your Chandler before you place your next order. Send for your Chandler catalog today.



**chandler**

products corporation

1489 Chardon Road  
Cleveland 17, Ohio

8791-CB

For More Information Write No. 283 on Place Mark Card—Page 32

## Association News

### Dayton Plans Conference For October 7 and 8

The Fourth annual procurement conference in Dayton, Ohio on October 7 and 8, cosponsored by the Dayton Association of Purchasing Agents and the University of Dayton, will be headed by Dr. Howard Lewis and Stuart F. Heinritz.

Mr. Heinritz has just completed a tour of the Far East where he directed procurement workshops for various purchasing groups.

Some of the topics to be discussed at the Dayton Workshop are: "Tools for Value Analysis"; "Effective Savings Through an Organized Approach to Source Selection"; "Are You a Buyer or a Materials Manager?"; "Cost-Saving Buying Suggestions for Small Companies"; and "The Universal Language of Purchasing."

Advanced registrations may be made by contacting Prof. John B. Steinbruegge, University of Dayton, Dayton 9, Ohio.

### New York P.A.'s Attend Cost-Cutting Workshop

A workshop devoted to "The Purchasing Function: Cost-Cutting Practices" was recently sponsored by the Purchasing Agents Association of New York in cooperation with the Commerce and Industry Association of New York.

The purchasing group provided the discussion leaders: George W. Baker, Port of N. Y. Authority; William J. Heubach, Professional Development Committee; and Robert F. Ames, United States Steel Corp.

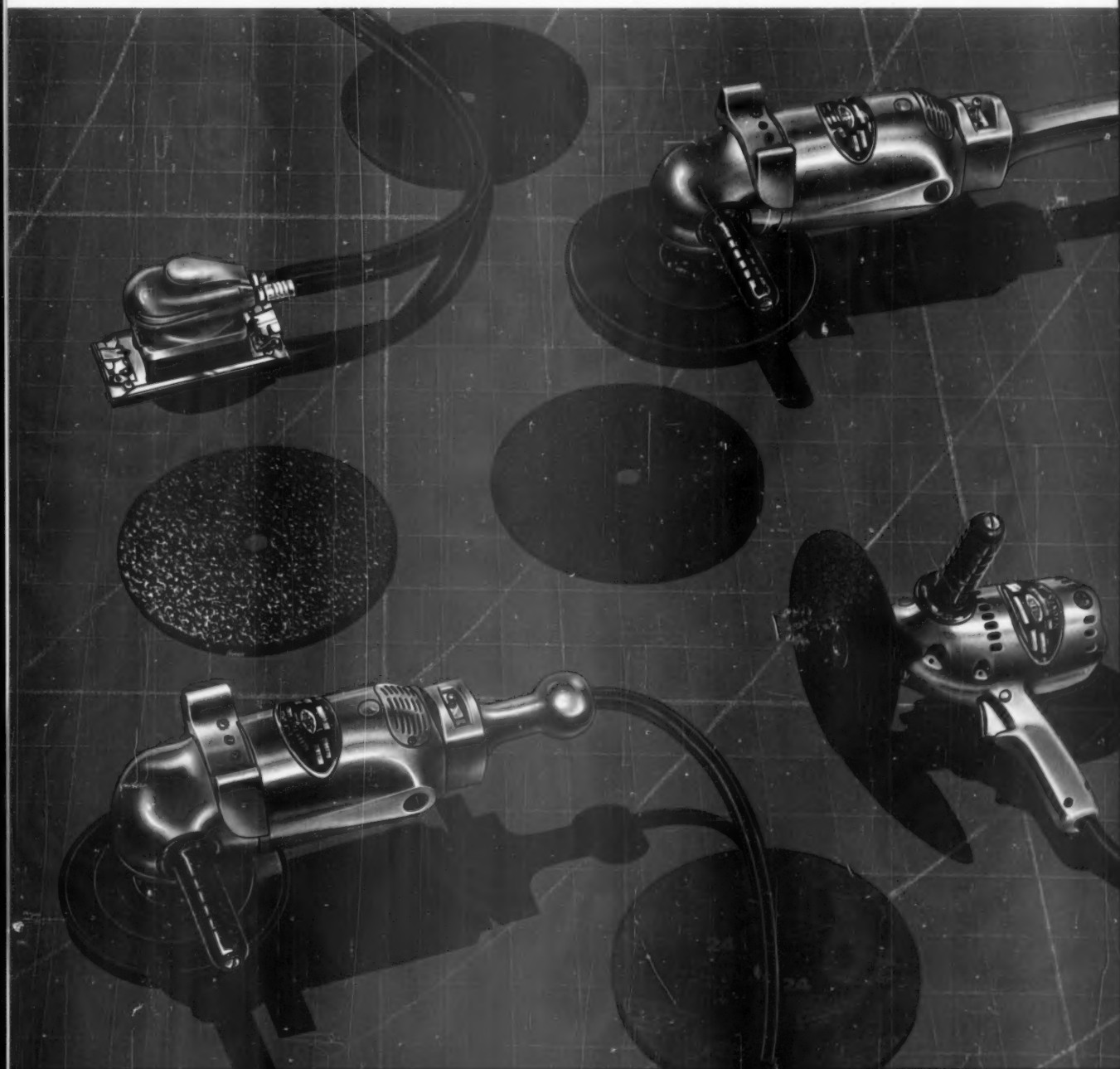
Through case study and workshop discussion the participants evaluated the most modern purchasing techniques and the application to their own purchasing jobs.

Mr. Baker stated, "Good purchasing is above all a matter of common sense. The best techniques and procedures cannot compensate for lack of judgment, insight and integrity."

For More Information about ad on facing page Write No. 284 on Place Mark Card—Page 32—  
PURCHASING



**GET FAST  
COOL** *Cutting Action!*



**BUY**  
→

**SIoux**

**SANDERS AND  
ABRASIVE DISCS**



**NEW**



*Air Driven*

# Flat Sander



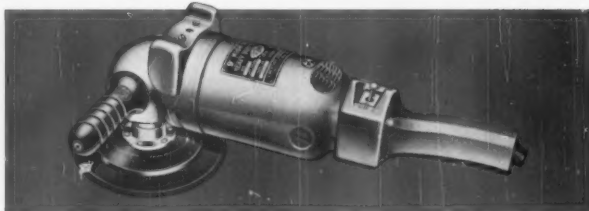
Exclusive design features include a remote exhaust system which carries exhausting air and lubricant away from the work and the operator; a palm switch paddle for convenient, comfortable one hand control; and the efficient Sioux mechanical design which requires up to 30% less air for the same amount of work. Oscillating orbital action produces a superior finish; for wet or dry sanding. It's powerful, light, and perfectly balanced for feather edging.

*Powerfully Dependable*

## SIOUX HIGH SPEED H. D. SANDERS



SMOOTH, powerful Sioux Sanders operate with cost cutting speed and ease. They're designed with stamina and dependability for the most punishing use. Heat



treated gears, and permanently lubricated bearings help assure long, trouble-free life. They're the best buy in the long run.

## SIOUX ABRASIVE DISCS *cut fast, run cool!*

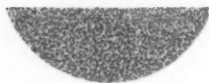
INDUSTRIAL



REGULAR



OPEN COAT



GRIND-A-LITE



**INDUSTRIAL**—As compared with regular discs Sioux Industrial Discs have 31% more fibre shear strength to keep the disc from flying apart under severe use; 39% more grain to provide more cutting points; and 49% more resin to securely bond the extra grain.

**REGULAR**—Regular discs are intended for work on light gauge metal where heat generated by heavier type might cause warpage or metal expansion. Resin bond tempered aluminum oxide grain is used on Regular and all Sioux discs for maximum cutting action.

**OPEN COAT**—Open coated discs are intended for paint removal, and for cooler grinding on curved, or recessed surfaces. They are recommended for use anywhere an abrasive is needed that should not load or clog.

**GRIND-A-LITE**—The new Grind-A-Lite disc is intended for general sanding operations on light gauge metal. It is light, flexible and excellent for use on contoured surfaces. It cuts sharper, runs cooler, loads less, and lasts longer than most other discs.

Find Your Nearest SIOUX Distributor in the Yellow Pages  
Under "Tools, Electric"

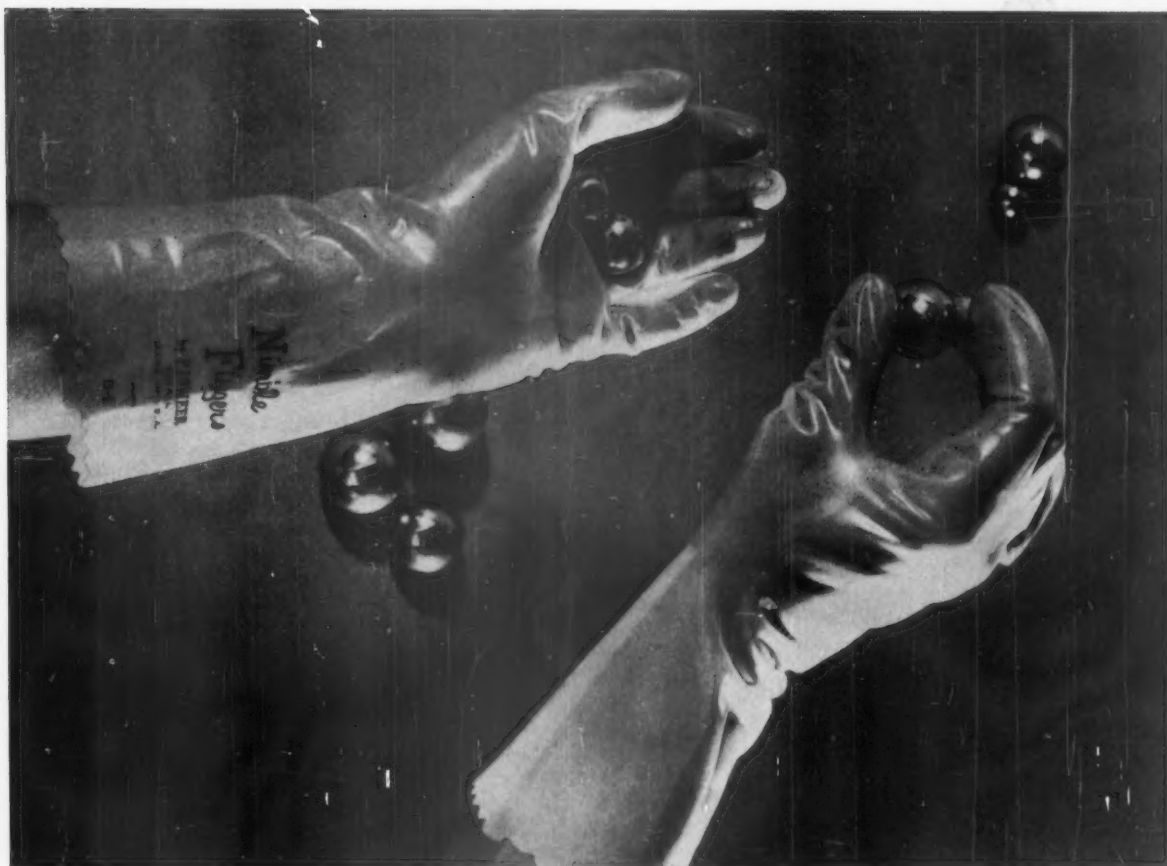
**ALBERTSON & CO., INC.**

SIOUX CITY, IOWA, U.S.A.

AIR IMPACT WRENCHES • AIR SCREWDRIVERS • ELECTRIC IMPACT WRENCHES • DRILLS • SCREWDRIVERS • GRINDERS  
• SANDERS • POLISHERS • FLEXIBLE SHAFTS • PORTABLE SAWS • VALVE GRINDING MACHINES • ABRASIVE DISCS.







# PIONEER Protects Products from Hands



- Sheer liquidproof industrial gloves for dexterity
- Protect products during handling
- Hand protection for light industrial applications

Style Number	DESCRIPTION			Hand Only	Hand Wrist	Hand Forearm
	Material	Finish	Color			
0808	Sheer Latex	Smooth	White	7½"	—	—
V-10	Sheer Pylox	Non-slip*	Yellow	—	10½"	—
RSW-13	Sheer Neoprene	Non-slip	Coral	—	10½"	—
7852	Sheer Neoprene	Smooth	Green	—	10½"	—
0754	Sheer Latex	Smooth	White	—	10½"	—
4754	Sheer Latex	Smooth	Brown	—	10½"	—
0794	Sheer Latex	Non-slip	White	—	10½"	—
V-20	Medium Pylox	Non-slip*	Yellow	—	10½"	—
0763	Sheer Latex	Smooth	White	—	—	18"

\* Smooth models may be reversed to provide non-slip grip

## Send For PIONEER's Revolutionary "Foolproof Glove Selector"

Helps you solve many hand protection problems — whether they involve chemicals, abrasion resistance, worker fatigue, extreme hot and cold temperature, or products that must be protected from hands! Eliminates costly errors in glove selection.



**the PIONEER Rubber Company** Willard, Ohio, U. S. A.  
**Manufacturers of Famous Stanzoil Industrial Gloves**

The PIONEER Rubber Company  
 233 Tiffin Road, Willard, Ohio

(5)

Please send me:

- ☐ New "Foolproof Glove Selector" by Pioneer
- ☐ New PIONEER Industrial Glove Catalog
- ☐ 17" x 22" Full Line Glove Wall Chart

Firm \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

Requested by \_\_\_\_\_





# NEED GEARS?

Eliminate "high-cost specials"  
by standardizing on  
**AMERICAN STOCK GEARS**

Investigate and you'll probably find that instead of having to go to the added time and expense of ordering special gears, that your needs can be filled from the American line.

American is a 'complete' stock gear line. Manufactured by Perfection—a veteran of over 30 years in the gear business—these gears are made to the most precise standards, from the highest quality materials. This popular line includes brass, bronze, steel, semi-steel, cast iron, and non-metallic gears in a range of 48 to 3 diametral pitch.

You'll save time and money... save on inventory... simplify purchasing and have less lost production time by procuring your stock gear needs from your near-by distributor of American Stock Gears.



Ask for FREE copy of American Stock Gear Catalog No. 360 containing detailed information and engineering data.

**AMERICAN STOCK GEAR** division  
Perfection Gear Co., Harvey, Illinois

For More Information Write No. 286 on Place Mark Card—Page 32

## Association News

### Speakers Club Started At Dallas Association

The Purchasing Agents Association of Dallas may have started something which will be a boon to audiences everywhere. They recognized the fact that purchasing agents are being called on frequently to give talks—both inside and outside the company.

To help members meet this challenge a group has been formed with the primary purpose of improving the public speaking ability of its members through practice and corrective criticism.

Plans provide for every member to make at least 12 speeches, each speech designed for a specific purpose. Participation has been limited to 30 in order for everyone to take part in each meeting.

C. M. Newsom is general chairman of the group

### Buyers Group In New York Brainstorms Attendance Problem

A recent meeting of the Metropolitan Purchasers Club in New York was devoted to "Creative Thinking and Brainstorming." To illustrate the method members divided into groups of five to brainstorm the question "How Can We Increase Our Attendance?"

An analysis of the suggestions submitted with an allotted five minute period produced the following ideas:

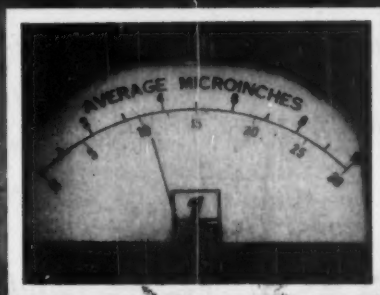
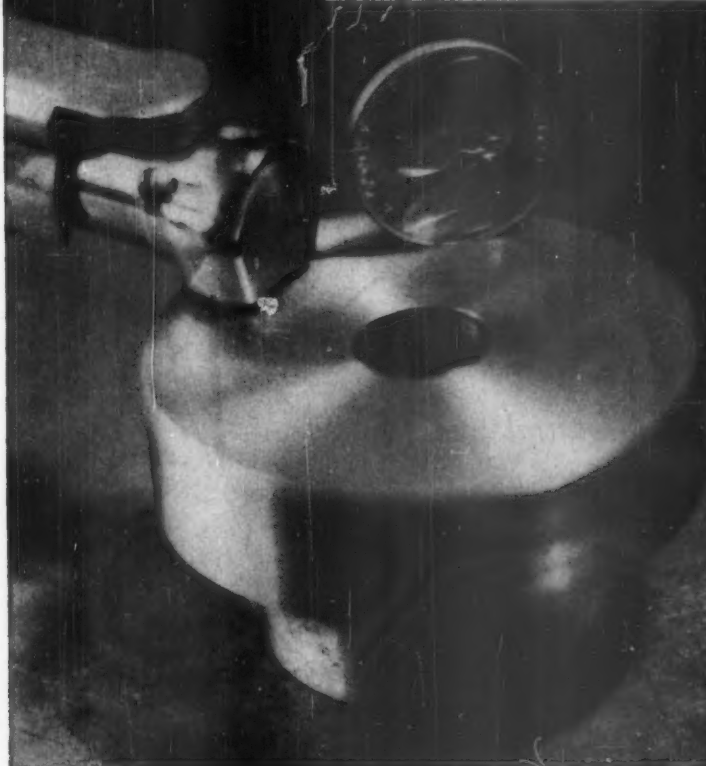
- Distribute active membership list.
- More publicity in trade journals.
- Appoint committee to contact members by phone.
- Better location for meeting place.
- Separate dinner and meeting.
- Increase size of committees.
- Earlier distribution of program.
- Fewer meetings.
- Provocative topics.
- Active executive committee.

(Please turn to page 224)



"If that nickel even quivers we have to start all over.

Naturally, we don't test our gear blanks with nickels. We use a special electrical indicator, like the one in the small picture, to give us the true story on precision. But that nickel, balanced on our testing apparatus, gives you a good example of just how smooth and precise our products *have* to be."



## "We depend on Cities Service for absolute precision!"

Lester E. Hoffmann, Treasurer and Vice-President  
American Screw Machine Products Co., Chicago, Ill.

"The screw machine business is a highly competitive trade. We've built our business and our reputation on top quality, high-precision products . . . gear blanks that require the closest tolerances in *all* aspects. That means *we have to have* the best-quality cutting oil available. We've depended on Cities Service for nearly 25 years and they've never let us down."

"Matter of fact," says Mr. Hoffmann, "they insisted we try other brands just to prove that Cities Service was the best for us. They proved their point. We've stuck with Cities Service."

At the present time, American Screw Machine Products Co. is using Cities Service CHILLO 10 Cutting oil, and some CHILLO 22. As Mr. Hoffmann says, "The sul-

phur and chlorine additives prevent welding and galling action which allows for fine finishes and long tool life that maintains high-precision, top-quality work."

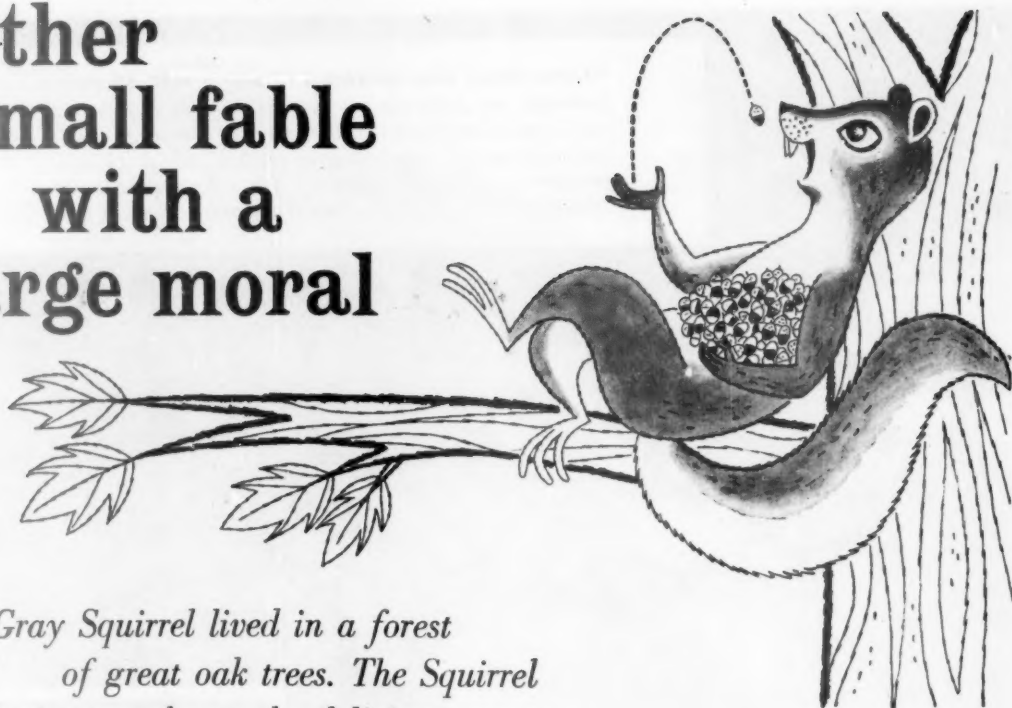
If you use petroleum products in your operations, why not talk with your Cities Service Lubrication Engineer? He can help you get the most from your operations by giving you the finest products, the best service available. Or if you prefer, write: Cities Service Oil Company, Sixty Wall Tower, New York 5, N. Y.

**CITIES  SERVICE**  
QUALITY PETROLEUM PRODUCTS

For More Information Write No. 287 on Place Mark Card—Page 32



# Another small fable with a large moral



*Gray Squirrel lived in a forest  
of great oak trees. The Squirrel  
dined sumptuously on the delicious acorns*

*that grew high on the branches.*



*But one day a visiting squirrel  
told of another forest, quite far away,  
where the trees were not nearly so tall,  
and where the acorns were much easier to reach.*

*The Gray Squirrel set out for those easy pickings  
in the distant forest. They were tasty indeed.*

*On his third trip he met a Hungry Fox.*

*End of story.*

**MORAL:** Smart squirrels know it's wiser in the long run to  
gather acorns in their own back yard.

Whether your needs be acorns or steel, your safest, most reliable suppliers are right here at home. No one knows the needs of American steel buyers better than American steel makers. To serve you, and serve you well, is our primary concern—not just today and tomorrow—but year after year.

For quality steel of certified analysis, meeting the appropriate specifications, you can rely on Bethlehem

Steel for such products as reinforcing bars, wire and wire products, pipe, structural shapes, plates, carbon bars . . . hot-rolled, cold-rolled, and galvanized sheets . . . transmission towers and other fabricated steel, wire rope, and industrial fasteners.

And remember, our engineers are on call to help you solve your steel-working problems.



*for Strength  
... Economy  
... Versatility*

## BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.



For More Information Write No. 288 on Place Mark Card—Page 32



# big design features

**in a  
small  
pump**



Where pumps are a vital part of processing systems, powerful "K" Line Motorpumps are your economical and dependable choice. The "K" Line Motorpump—a recent development by Ingersoll-Rand—is easy to install, easy to service. It is designed with all the quality and performance engineered into the largest Ingersoll-Rand pumps. They're supplied in iron, bronze or special alloy to meet your specific needs. Other Motorpumps available through 75 hp for capacities to 3200 gpm, heads to 650 feet. Check into the advantages of the "K" Line by calling your nearby Ingersoll-Rand pump specialist. Or see your local I-R Distributor.

*a century*

1860 — 1960

*of pump progress*

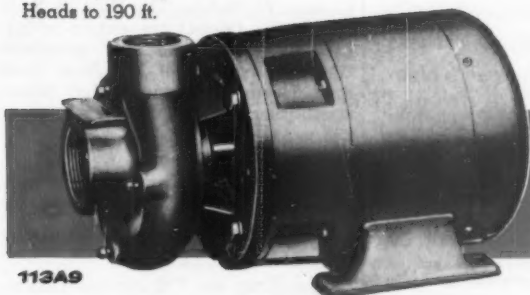
*from the leading manufacturer*

I-R "K" Line Motorpump  
Up to 775 gpm  
1/4 through 25 hp  
Heads to 190 ft.



## Ingersoll-Rand

11 Broadway, New York 4, N.Y.



113A9

### OTHER I-R PUMPS AVAILABLE



CRV—Cradle-Mounted

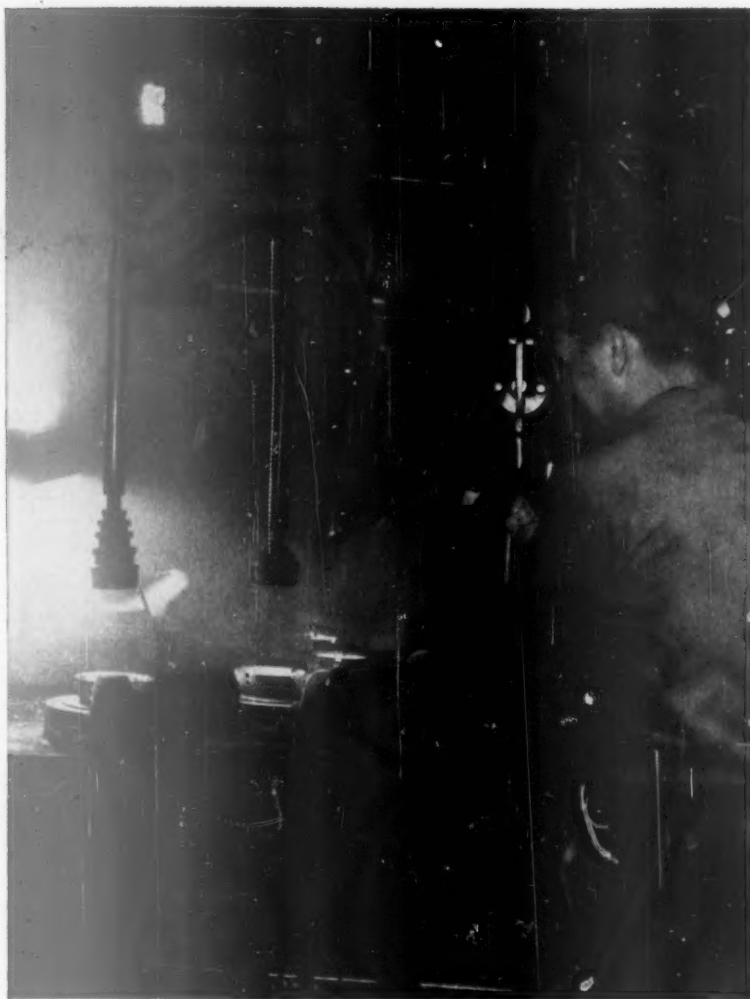


Self-Priming Motorpump



Horizontally Split





**Lancaster  
mass production  
reduces  
the cost  
of your glass parts . . . and assures you**

of uniform high quality from first to last. When you order glass components from Lancaster, you get a firm delivery date based on immediate scheduling. And Lancaster produces your parts with the method that means lowest possible unit cost: automated machines for large orders, efficient hand work for smaller runs. (Equipment shown above produces parts from crystal, colored and lead glasses or moonstone.) Lancaster design experience and production facilities are at your disposal — no matter what type of glass or process your part requires. Call OLive 3-0311 for information or send blueprints for quotations. **LANCASTER GLASS CORPORATION, LANCASTER 4, OHIO.**



For More Information Write No. 290 on Place Mark Card—Page 32

## Association News

(Continued from page 220)

- More education programs, e.g. "How to Buy" sessions.
- Visit other organizations — schools.
- Criticism sessions.
- Quarterly reviews.
- Monthly follow-up by attendance committee of inactive members.
- Individual table settings (4 to a table).
- Begin and end meetings on time.
- More publicity about the club.
- More plant visits.
- Short reports on what each member's company does.
- Encourage greater participation by members.
- Have each member invite a prospect to the next meeting and call it "Prospective Members Night."
- More workshop sessions with audience participation.

### Unionism Defined At New York Association

"Labor is more conscious of its community responsibility than ever" Mark Starr, former national education director of the Inter-

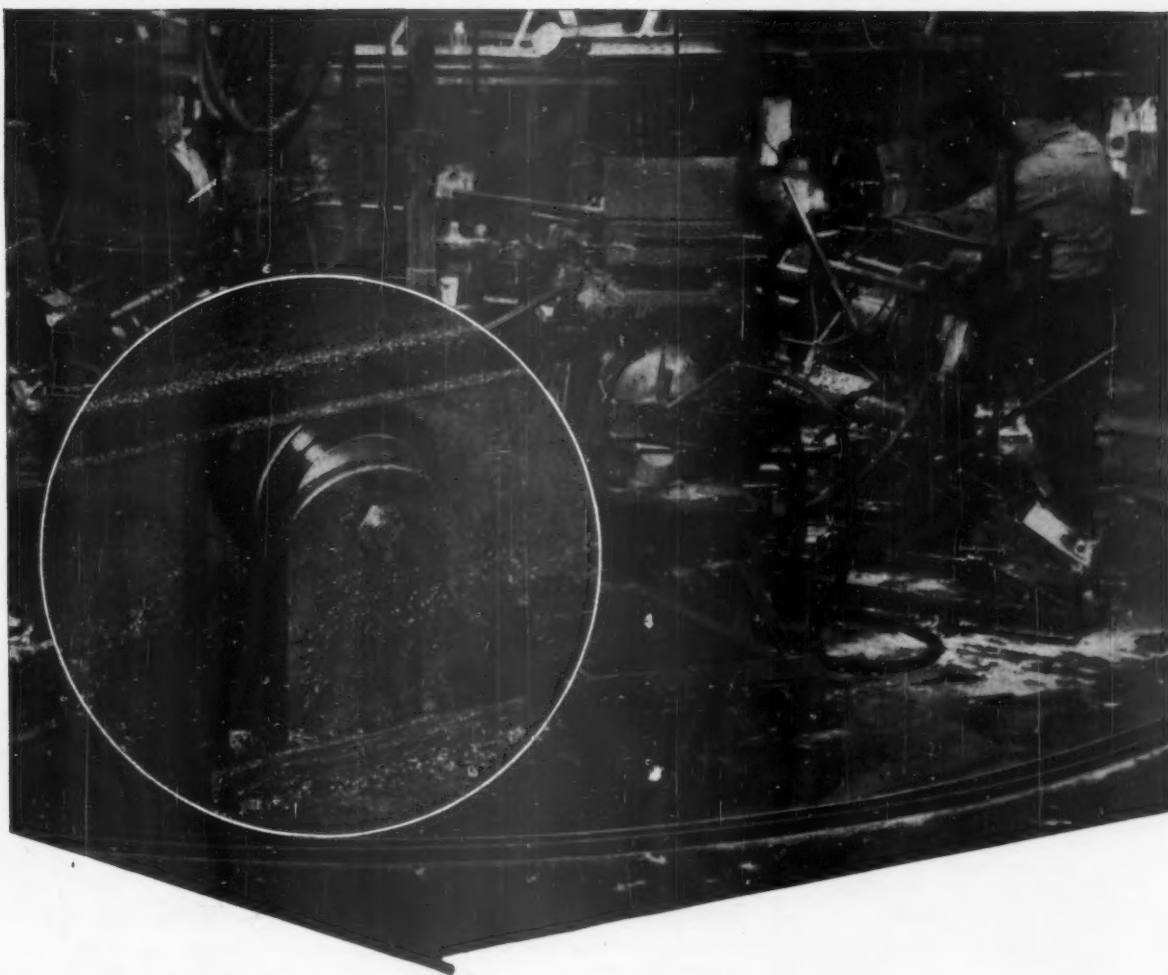


**George W. Baker, The Port of N. Y. Authority, (right) presents a certificate to one of the new members. Baker, president of the New York Association, announced that membership had reached a new high of 958.**

national Ladies Garment Workers Union, told a recent meeting of the Purchasing Agents Association of New York.

Speaking on "Business Union-  
(Please turn to page 226)





## **Bearings, Inc. turned this turntable from a costly maintenance problem into a smooth, trouble-free operation!**

Our customer, an aluminum foundry, designed and built this system for continuous and automatic pouring of permanent mold castings. The turntable is approximately 20 feet in diameter. Supporting the table, which weighs several tons, were 20 large, double-row bearings. The life of these bearings was only a few weeks and their cost, plus downtime, was becoming increasingly expensive.

Our bearing engineers were asked for a solution and, after an investigation, recommended a camroll bearing.

Now, after many months of operation, all turntables in the plant are equipped with the bearings we recommended and there has not been a bearing failure in that period!

If you have a problem involving bearings, call the Bearings, Inc. branch nearest you for expert help. We are the authorized distributor for all the bearings we sell—your guarantee that the bearings we deliver will be of the latest manufacture and right for your application!

*Providing bearing service  
in the North>*

*and*

*in the South>*

### **BEARINGS, INC.**

**OHIO:** Akron • Canton • Cincinnati • Cleveland • Columbus • Dayton • Elyria • Hamilton • Lima • Lockland • Mansfield • Painesville • Toledo • Youngstown  
**INDIANA:** Ft. Wayne • Indianapolis • Muncie • Terre Haute • **PENNSYLVANIA:** Erie • Johnstown • Philadelphia • Pittsburgh • York  
**WEST VIRGINIA:** Charleston • Huntington • Parkersburg • Wheeling • **NEW JERSEY:** Camden • Newark  
**NEW YORK:** Balenrol Corp. • Buffalo • Niagara Falls • **MARYLAND:** Baltimore • **DELAWARE:** Wilmington

### **DIXIE BEARINGS, INC.**

**FLORIDA:** Jacksonville • **GEORGIA:** Atlanta • **KENTUCKY:** Louisville • **LOUISIANA:** Baton Rouge • New Orleans  
**N. CAROLINA:** Charlotte • Greensboro • **S. CAROLINA:** Greenville • **TENNESSEE:** Chattanooga • Kingsport • Knoxville • Nashville  
**VIRGINIA:** Norfolk • Richmond



## For Quality and Economy Use



### For Service Contact...

**CONNECTICUT**  
Connecticut Malleable Co., New Haven 6  
Eastern Malleable Iron Co., Naugatuck  
New Haven Malleable Iron Co., New Haven 4

**DELAWARE**  
Eastern Malleable Iron Co., Wilmington 99

**ILLINOIS**  
Central Fdry. Div., Gen. Motors, Danville  
Chicago Malleable Castings Co., Chicago 43  
Moline Malleable Iron Co., St. Charles  
National Malleable and Steel Castings Co., Cicero 50  
Peoria Malleable Castings Co., Peoria 1  
Wagner Castings Company, Decatur

**INDIANA**  
Albion Malleable Iron Company,  
Muncie Division, Muncie  
Link-Belt Company, Indianapolis 6  
National Malleable and Steel Castings Co., Indianapolis 22

**IOWA**  
Iowa Malleable Iron Co., Fairfield

**MASSACHUSETTS**  
Belcher Malleable Iron Co., Easton

**MICHIGAN**  
Albion Malleable Iron Co., Albion  
Auto Specialties Mfg. Co., Saint Joseph  
Cadillac Malleable Iron Co., Cadillac  
Central Fdry. Div., Gen. Motors, Saginaw

**MINNESOTA**  
Northern Malleable Iron Co., St. Paul 6

**MISSISSIPPI**  
Mississippi Malleable Iron Co., Meridian

**NEW HAMPSHIRE**  
Laconia Malleable Iron Co., Laconia

**NEW YORK**  
Acme Steel & Malleable Iron Works, Buffalo 7  
Frazer & Jones Company Division  
Eastern Malleable Iron Co., Solvay  
Oriskany Malleable Iron Co., Inc., Oriskany  
Westmoreland Malleable Iron Co., Westmoreland

**OHIO**  
American Malleable Castings Co., Marion  
Central Fdry. Div., Gen. Motors, Defiance  
Dayton Malleable Iron Co., Ironton Div., Ironton  
Dayton Malleable Iron Co., Ohio Malleable Div., Columbus 16  
Maumee Malleable Castings Co., Toledo 5  
National Malleable and Steel Castings Co., Cleveland 6

**PENNSYLVANIA**  
Buck Iron Company, Inc., Philadelphia 22  
Erie Malleable Iron Co., Erie  
Lancaster Malleable Castings Co., Lancaster  
Lehigh Foundries Company, Easton  
Meadville Malleable Iron Co., Meadville  
Pennsylvania Malleable Iron Corp., Lancaster

**TEXAS**  
Texas Foundries, Inc., Lufkin

**WEST VIRGINIA**  
West Virginia Malleable Iron Co., Point Pleasant

**WISCONSIN**  
Belle City Malleable Iron Co., Racine  
Chain Belt Company, Milwaukee 1  
Federal Malleable Company, Inc., West Allis 14  
Kirsh Foundry Inc., Beaver Dam  
Lakeside Malleable Castings Co., Racine  
Milwaukee Malleable & Grey Iron Works, Milwaukee 46

These companies are members  
of the Malleable Castings Council

## Association News

(Continued from page 224)

ism vs. Social Unionism" Mr. Starr pointed out that in the past some unions have tried, like business, to "get rich quickly, honestly if you can." But today the unions are interested in looking after all the people, including non-unionists. His talk was followed by a very spirited question and answer period.

The General Forum preceding the dinner meeting featured nine members of the New York Association speaking on the subject "You Can Hurdle the Roadblocks To Cost Reduction."

Walter W. Merrill, Price, Waterhouse & Co., discussed "The Art of Interviewing" at the Office Equipment and Supply Forum."

### Midwest P.A.'s Attend Purchasing Course



Coordination and Control—Key Areas of Materials Management is the subject Ken Block of A.T. Kearney and Co. presented to purchasing men from the midwest. This session on materials management was the fifth in a series of six recently completed at the University of Wisconsin. Plans are being made to continue the series next season.

### Houston P.A.'s Tour Hometown Plant



C. A. Carter (center), president of Tex-Tube, Houston, was host to the Houston Purchasing Agents Association during a recent plant visit. C. O. Thompson (left), Texas Eastern Transmission Co., and J. E. Condon, Shell Pipeline Company, chairman of the plant visitation committee, arranged the visit.

For More Information Write No. 292  
on Place Mark Card—Page 32





Schlieren photograph showing heated air rising from Malleable chain link at 1200° F.

## For Hot Parts... Use **Malleable**

Heat them up, cool them off—ten thousand times. Heat them up, keep them hot—indefinitely... you'll find you can count on Malleable iron castings for an exceptional combination of safety and economy.

New research demonstrates that the rugged room-temperature characteristics of Malleable castings remain virtually unchanged up to 800° F! More important—from 800° F. to 1,200° F., Malleable castings are unique in providing safe, dependable service **without** sudden drop in strength.

Let a nearby Malleable castings producer help you develop better, more economical parts for elevated temperature applications. Send drawings or an outline of your requirements to any of the progressive companies that display this symbol—



For detailed information on "Use of Malleable Castings in Elevated Temperature Applications," contact any company listed on the opposite page, or Malleable Castings Council, Union Commerce Building, Cleveland 14, Ohio.

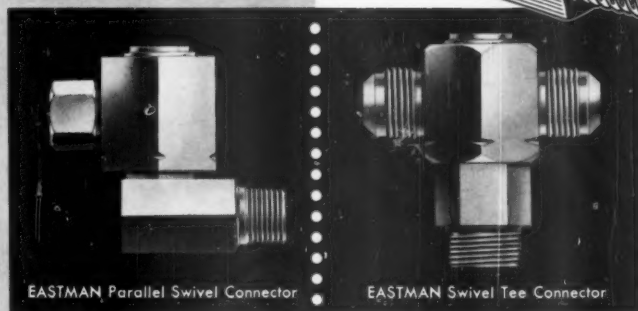




Licensed Under  
Pat. No. 2481404

## AMAZING VERSATILITY AND ADAPTABILITY!

These two adaptations, specified by two of America's largest major equipment manufacturers, reveal the unique adaptability and versatility of EASTMAN'S improved Industrial Swivel Connector.



EASTMAN Parallel Swivel Connector

EASTMAN Swivel Tee Connector

### **improves SEALING QUALITY**

through use of SIX seals, thereby eliminating failure from grit, dust and other foreign materials.

### **improves SERVICE LIFE**

through new design and engineering, the interior is chrome-hardened with a highly polished mirror finish.

### **improves UNIFORMITY OF FLOW**

at any angle of the swivel by undercutting the shaft to equal diameter of the orifice.

### **improves SERVICEABILITY**

through shorter, more compact housing; saving weight. Hex design permits multiple tapping on housing; easier assembly.

**W**hile the use of EASTMAN'S High Pressure Industrial Swivel Connector eliminated the cause of hose failure due to constant, extreme flexing, it tended to increase the load on the swivel connector.

To improve the performance of the swivel itself, EASTMAN engineers improved its internal design, chrome-hardened its interior surfaces, cadmium plated the shaft and then machined them to a mirror-like finish.

Satisfactory service under the most unfavorable field conditions was insured by increasing sealing rings from four to SIX: 2 leather dust seals, 2 synthetic back-up washers and 2 quad rings of oil-resistant rubber ( $-65^{\circ}$  to  $+250^{\circ}$ ).

Exhaustive tests at 3000 p.s.i., through one million cycles, with the hydraulic fluid saturated with abrasives, dirt and other foreign materials, proved EASTMAN'S Industrial Swivel Connector satisfactory in every respect and did not cause failure of any kind.

That is why America's leading OEM's and replacement buyers specify *complete* EASTMAN Hydraulic Hose Assemblies... for improved design, quality manufacturing and exhaustive testing. It pays to specify EASTMAN.

## STANDARD SIZES AND COMBINATIONS AVAILABLE

**LOW TORQUE**—Freedom from friction, even under high pressure.

**WIDE RANGE**—Operating pressures up to 5000 p.s.i. trouble-free operation through wide temperature range ( $-65^{\circ}$  to  $+250^{\circ}$ ).

**ROTATION**—Full  $360^{\circ}$  for all manifolds.

**SIZES**—Steel, plated for corrosion protection— $\frac{1}{2}''$ ,  $\frac{3}{4}''$ ,  $1''$ ,  $1\frac{1}{4}''$ .

Other sizes available on request.

LOOK INTO  
EASTMAN'S IMPROVED  
SWIVEL CONNECTOR—  
WRITE TODAY!

Please send me  
Bulletins 100 and  
200 on low,  
medium and  
high pressure  
assemblies.



# Eastman

MANUFACTURING COMPANY  
DEPT. PM-6, MANITOWOC, WISCONSIN

For More Information Write No. 293 on Place Mark Card—Page 32

For More Information about ad on facing page  
Write No. 294 on Place Mark Card—pg. 32→

PURCHASING



# ALL CAPITOL FITTINGS give you these benefits

## SAVE MAKE-UP TIME ASSURE PRESSURE TIGHT JOINTS

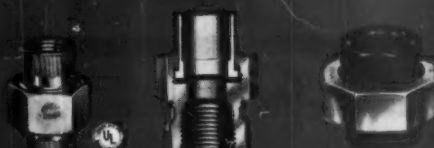
Careful inspection assures true alignment for faster make-up. Army-Navy gauging procedure guarantees full formed threads for pressure tight joints with any CAPITOL screwed fitting. The same care and skilled workmanship for all classes of CAPITOL pressure fittings assure trouble-free installations.

## COMPLETE PROTECTION FROM CORROSION

All CAPITOL fittings are fully protected against corrosion. Job-determined coatings that have proved most effective are applied according to general uses of each type of fitting. Special coatings are available when needed.

## ASK YOUR DISTRIBUTOR FOR CAPITOL FITTINGS

Specify CAPITOL to assure job-tested fittings. Steel fittings assure no sand holes, no porosity. Every CAPITOL fitting equals or exceeds all published specifications for its size and pressure. All are conveniently packaged and protected to ensure delivery in factory finish condition.



U.L. INSULATING 3000 P.

### UNIONS

All CAPITOL Forged Steel Unions, 3000 P., 3000 U., are individually pressure tested... 2500 P. unions with brass seat and 3000 P. unions with integral steel or brass seat are made to the rigid requirements of Underwriters Laboratories. All types of Insulating Unions to eliminate corrosion caused by electrolysis or galvanic action are available in every needed size.



### COUPLINGS

No matter what size or type of coupling you need, CAPITOL makes it. More than 20 types of couplings in 24 sizes of steel are stocked for prompt shipment. Made to specifications of Association of American Railroads, American Iron and Steel Institute. Sizes up to 24" are cartoned at no extra cost.

### NIPPLES

All steel nipples, all sizes, carefully chamfered, threaded and rigidly inspected.



### FORGED STEEL ELLS and TEES

3000 P., 3000 U. and 3000 P. Cracked and Sulfur Weld. Wide-flange finish for ease.

See strength at the threads. Packaged in convenient cartons.



### CAPADAPTERS

For joining pipe and metal pipe. Available galvanized. Packaged in convenient cartons.



### CAPS

Standard and Special. Size 1/2" through 24"

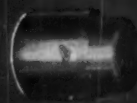


### HEX HEAD PLUGS

Designed to maintain correct. High pressure plugs are individually threaded protected.



### SQUARE HEAD PLUGS



### REDUCING COUPLINGS

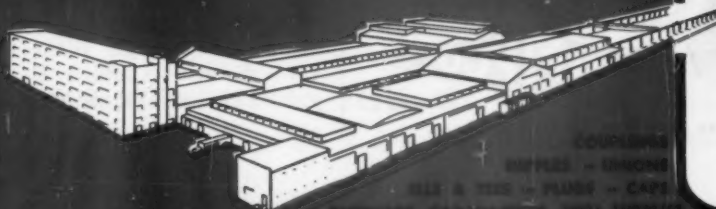
All sizes. Packaged in convenient cartons.



### BUSHINGS

Sizes 1/2" to 16" through 24" x 24" available for immediate shipment.

SOLD ONLY THROUGH RECOGNIZED DISTRIBUTORS



**CAPITOL**  
MANUFACTURING CO.  
DIVISION OF HARSCO CORP.  
COLUMBUS, OHIO



## NOW - the first polished aluminum towel dispenser

"It'll look this good months from now"



The new look is polished aluminum — a brand new Turn-Towl cabinet that takes water and wear without showing it. Intensive two-year tests prove:

- Anodized permanent aluminum finish can't rust, won't wear or chip
  - Cabinet is easy to clean, leaves no fingerprints
- Your nearest Mosinee Turn-Towl distributor has the new aluminum cabinet now. Write for his name.

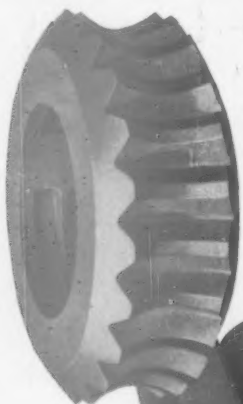


Mosinee Turn-Towl cabinets are leased free for use with Mosinee towels only

For More Information Write No. 295 on Place Mark Card—Page 32

## Longer life for critical bronze parts

— when they are made of **AMPCO®**



When you select Ampco, you are getting *engineered materials*—alloys with characteristics that match the job requirements for resistance to wear, fatigue, impact, corrosion, etc.

Ampco can deliver the shape and form you require, because Ampco is equipped to manufacture by the *best* process for your purpose. Ampco can be obtained as cast or wrought products, and finish-machined by one organization with years of specialized experience.

Numerous parts of Ampco alloys are specified in original equipment. Maintenance, too, employs Ampco to reduce downtime. Ask for an Ampco Engineer to call — or write for literature.

**AMPCO METAL, INC.**  
Dept. 370F, MILWAUKEE 1, WIS.  
West Coast plant: Burbank, California  
Southwest plant: Garland (Dallas County), Texas



For More Information Write No. 296 on Place Mark Card—Page 32

## Association News

### More than 100 Cleveland Members Make Plant Visit



A. O. Anderson (left) and R. W. Shaw, both of the Aluminum Co. of America are shown at one of the stops in the recent tour made by the Cleveland Association of Purchasing Agents through the plant of Addressograph-Multigraph Corp. About 115 members of the Association toured the plant and looked at some of the \$30 million worth of materials and supplies purchased by George Fay.

### Georgia P.A.'s Elect Officers

Fred E. Kreiss, Jr., purchasing agent for Buick, Oldsmobile, Pontiac Assembly Division, General Motors Corporation, Doraville, Georgia, was recently elected president of the Georgia Association of Purchasing Agents for the year 1960-1961.

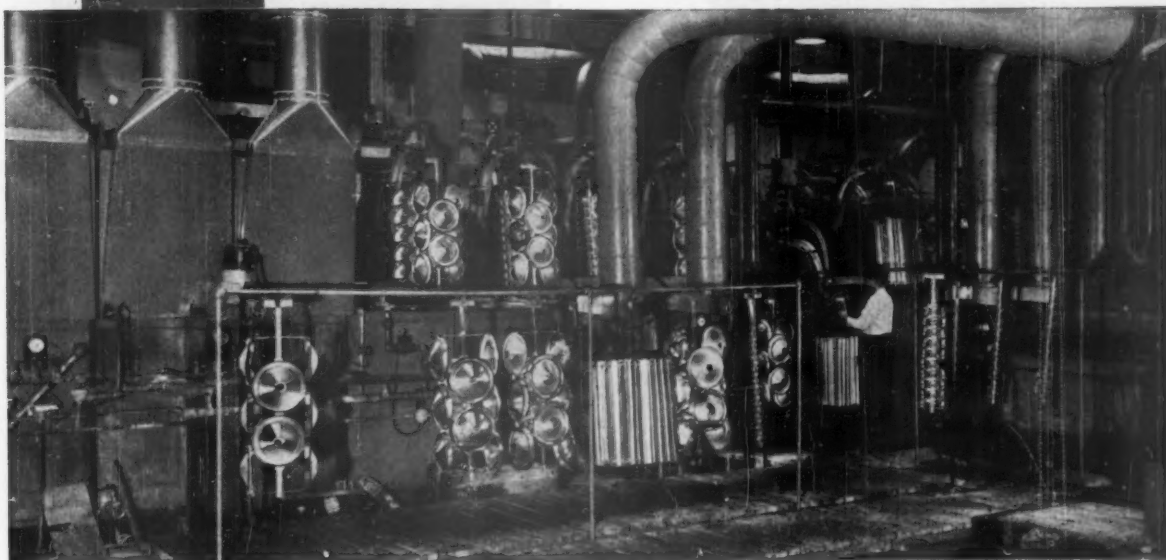
Joe C. Reeves, immediate past president and purchasing agent for Atlanta Newspapers, Incorporated, was elected national director.

In addition to Mr. Kreiss and Mr. Reeves, the following members of the Georgia Association were elected: first vice-president—Robert E. Dunn, of H. W. Lay & Company, Inc., second vice-president—H. P. Williamson, Georgia Power Company; secretary—Marie Sayne of the Atlanta Gas Light Co.; treasurer—James A. Guzzo, Rich's, Incorporated; director—Ernest J. Brewer of City of Atlanta; director—Clyde A. Keefer, Pittsburgh Plate Glass Co.; director—Clifford F. Servais, Celanese Fibers Company.



# F is for *FINISHES*

This anodic finishing unit is one of our many units capable of a variety of mechanical, chemical finishes. All part of our mill-to-final-finish facilities, at your service.



F  
.....

The finishing process serves many purposes, in producing aluminum components. It can have functional value, smoothing, roughening, or hardening the surface of the metal, or changing its character to make it more or less responsive to heat and cold. Or, it can add eye-appeal, through color or texture, and resultant sales value to any surfaces which will be exposed to view in the completely assembled product.

Phone, wire, or write, for more information about how our complete, mill-to-finish facilities can help you do *your* job better, for less.



MIRRO ALUMINUM COMPANY • MANITOWOC, WISCONSIN • Fifth Avenue Bldg., New York 10 • Merchandise Mart, Chicago 54

JUNE 20, 1960

For More Information Write No. 297 on Place Mark Card—Page 32

231

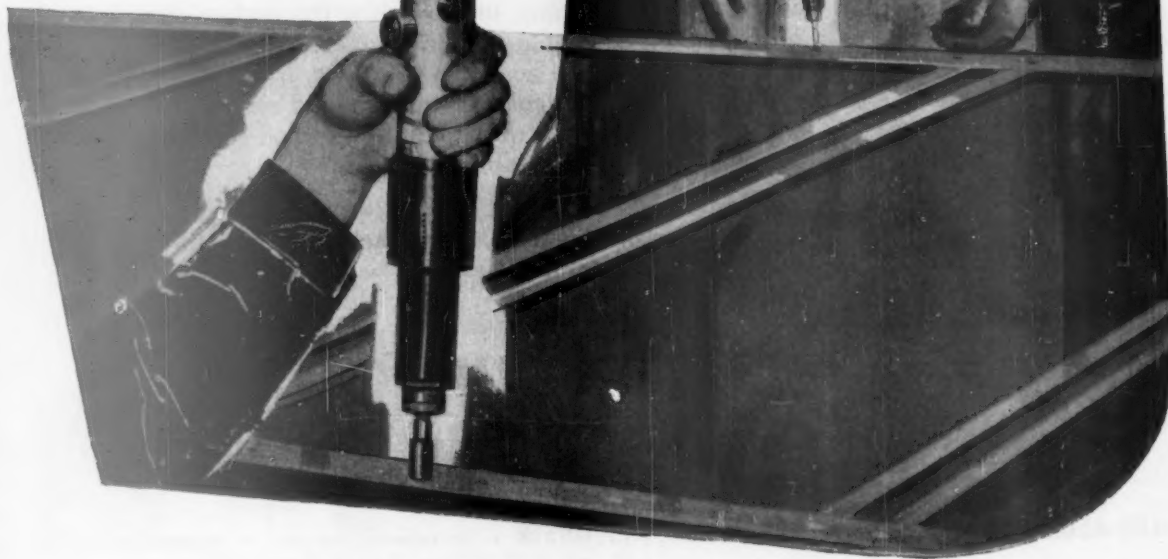


# Thor

Everything you want in  
Torque Control...

*and more!*

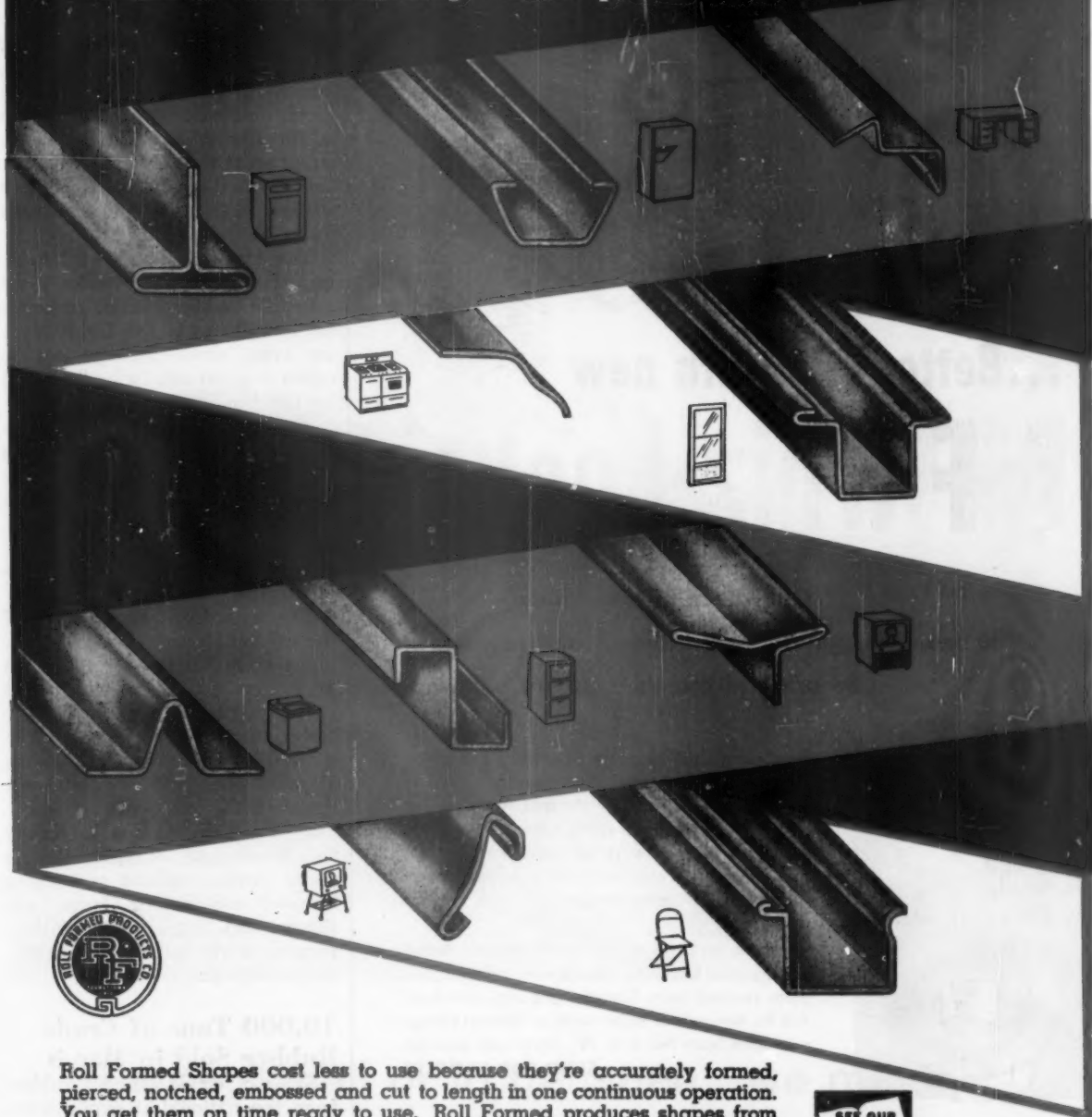
Thor Uni-Tork screwdrivers and nut setters make torque control of threaded fasteners as simple as turning on a light. Operator judgment and guesswork is gone. Uni-Tork snaps out of engagement when desired torque is reached, snaps in again when applied to the work. Thor Uni-Tork air tools have external torque adjustments from 10 to 100 inch-pounds. Available on all Thor air screwdrivers and nut setters and on Thor electric tools. Your Thor factory representative or distributor will show you the tools that think for themselves. Thor Power Tool Company, Aurora, Illinois. Branches in all principal cities.



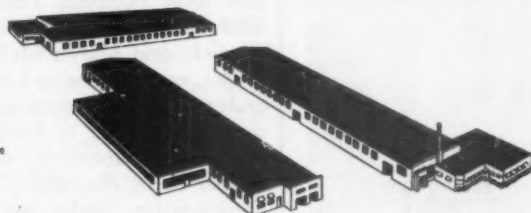
For More Information Write No. 298 on Place Mark Card—Page 32



# More economy for you ...



Roll Formed Shapes cost less to use because they're accurately formed, pierced, notched, embossed and cut to length in one continuous operation. You get them on time ready to use. Roll Formed produces shapes from carbon, galvanized and stainless steel, aluminum, copper, zinc and clad-metals. For a fast, thorough analysis of how Roll Formed can help you cut assembly costs, send your prints today. Ask for catalog No. 1555.



MAIN OFFICE AND PLANT 3754 OAKWOOD AVE. • YOUNGSTOWN, OHIO

JUNE 20, 1960

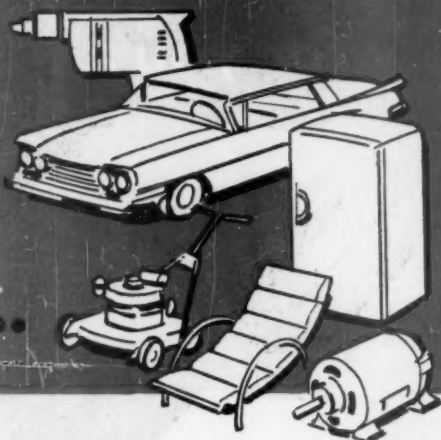
For More Information Write No. 299 on Place Mark Card—Page 32

233



Build  
better  
products  
with

**LOCK NUTS...**



...Better still with new

**MF Whiz-Locks®**

**One-piece free spinners**

that won't let go. So simple they'll amaze you.

So original there's a patent pending.



MacLean-Fogg's new Whiz-Lock is a one-piece, free-spinning lock nut that is simplicity itself. Spin it into place, wrench it tight and forget it. The scientifically designed spiral teeth take just the right grip on the work to prevent accidental loosening. Yet it removes readily on application of at least 25% more torque than was used to apply it.

MF Whiz-Locks have been as thoroughly tested as any new fastening device ever offered. Test them yourself soon. Samples are available free. Ask for hex nuts or bolts—with or without flange—in sizes from No. 6 to 3/8". State size desired.

**SEND FOR SAMPLES**

**MAC LEAN-FOGG LOCK NUTS**

**MacLean-Fogg Lock Nut Company**  
5535 N. WOLCOTT AVENUE  
CHICAGO 40, ILLINOIS

1926 **35** 1960  
ANNIVERSARY

For More Information Write No. 300 on Place Mark Card—Page 32

## News

### British Exhibition Attracts Wide Attention

Purchasing agents, together with philatelists, antique lovers, and auto enthusiasts, are finding much that is exciting and valuable at the British Exhibition, now in progress at the New York Coliseum. Opened on June 10 by Prince Philip, the show continues through June 26.

The huge collection of British manufactures, art works, and scientific achievements, occupies all four floors of the Coliseum—an area, show management is quick to point out, twice that used by the Russians a year ago.

A display of the official Federation of British Industries presents industrial successes of today as well as some pioneering innovations. Included are jet engines, rapid-process photography, fibre-glass boats, and nuclear equipment.

The second and third floors of the exhibition are devoted to displays from hundreds of British firms. Particularly noteworthy are the group exhibits devoted to audio equipment, motor cars, chemicals, electrical apparatus, diesel engines, and electronic test equipment.

On the lighter side, the fourth floor is reserved for typical British retail stores, replicas of inns, a hunting and fishing lodge, antiques, and displays of contemporary work by British artists and craftsmen.

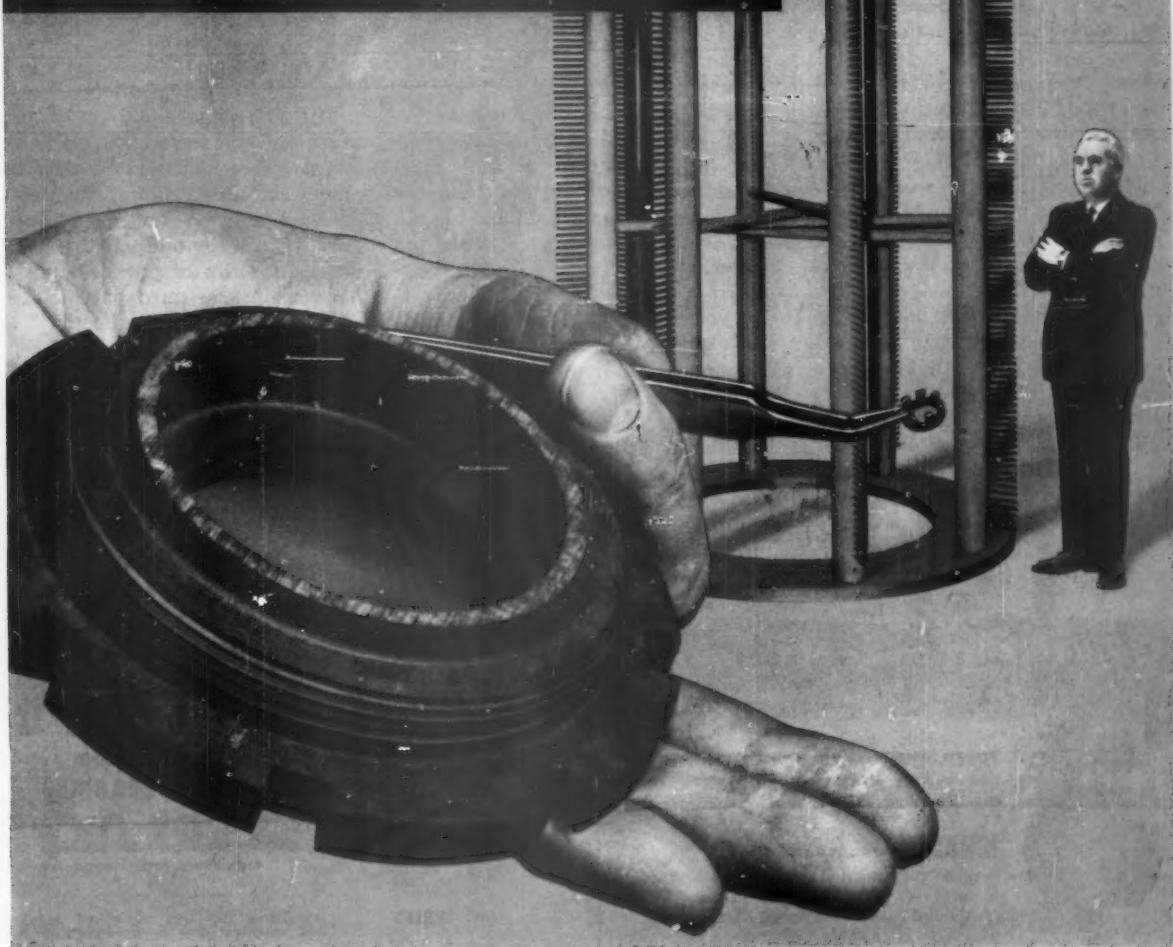
### 10,000 Tons of Crude Rubber Sold in March

Sales of crude natural rubber from the national stockpile were 10,073 tons in March. This brings the total sold by the General Services Administration to 57,629 tons between October 16, 1959—when the authorized sale started—and March 31, 1960.

The agency received authority, under the Independent Offices Appropriations Act of 1960, to sell, without replacement, stockpiled rubber being disposed of to avoid deterioration. Sales are negotiated on the basis of prevailing market prices.



Synthane makes and fabricates  
laminated plastics



## Large, small or in between...we make it

Size is no problem in our fabrication of Synthane laminated plastics. Whether the part fits into your palm or onto the head of a pin, or towers over you, we believe we can handle it.

Why? Because we make the material and can control it to suit the job. Our variety of machines and

tools, many of them special, permit the widest freedom in the choice of a machining approach. Our skilled people have rolled up over 30 years of experience in doing the difficult and impossible. So, large, small or medium in size, let us take the production worries of your part off your mind.

Call your Synthane representative for a quotation or write Synthane Corp., 7 River Road, Oaks, Pa.

**SYNTHANE**  
CORPORATION  OAKS, PENNA.

Sheets • Rods • Tubes • Fabricated Parts  
Molded-laminated • Molded-macerated

*You furnish the print—we'll furnish the part*

For More Information Write No. 301 on Place Mark Card—Page 32



## Purchasing Manuals

(Continued from page 108)

criticisms and additions. Then make whatever revisions are suggested, if you agree with them. For example, review with your V.P. of sales the section on relations with salesmen; with your V.P. of engineering and research, the sections on relations with other departments and patents; with your legal department, review the sections on the legal aspects, the "contract" section, purchase orders, etc.

The next step is to ask the president to distribute to each department head your proposed manual. Set a deadline for receiving from them any comments they wish to make before the manual is issued in its final form. Chances are you will receive a few comments. The fewer you receive at this point the better off you are. *This gets management into the act.* By reviewing the proposed manual, they learn what purchasing is trying to accomplish and how it is to be accomplished.

After all members of management team have had an opportunity to see the proposed manual, secure from the president of your company a letter to be placed in the foreword stating that your manual is the basis for your company's purchasing policies and procedures.

The final step is the issuance of numbered copies of the completed manual to every member of management team and to other members of your department. At this point, your purchasing manual has the authority that you need because of the approval of the president, and contains all of the subjects that you wish to cover.

Do a selling job to all those in your purchasing department. *This gets purchasing into the act.* Review the manual with them briefly, ask them to go over it in detail, and then schedule another meeting. At that time go over the manual again but in more detail. Answer any questions or comments they may have. From then on, you will be amazed at the co-operation that you will receive in

elevating the purchasing function within your company.

The Rockwell manual consists of 21 sections, containing a total of 88 pages. The ring binder provides flexibility so that changes and additions may be made. You will need to make them at least annually.

Since the manual was originally issued, I have made revisions without referring them to other members of management.

The first page is a copy of our president's endorsement of the manual. The second page is an allegorical illustration of the need for co-operation and co-ordination, and it is one of the best pleas for unity of purpose that I have seen. The third page is the purchasing manual index.

Sections 3 through 9 establish basic sound principles of procurement that any good purchasing man knows. Many purchasing department employees do not have spelled out for them in a manual these basic policies.

—By C. Warner McVicar, Director of Purchasing and Traffic, Rockwell Manufacturing Co.

### First choice of the rocket and missile industry...

Three superlative Marsh products are widely used and approved by the aircraft and missile industry:

#### MARSH Pressure Gauges...

because they combine the most advanced features ever found in pressure, vacuum and compound gauges. There is a Marsh Gauge for every conceivable application.

#### MARSH Needle Throttling Valves...

because they are guaranteed to give micro-meter regulation at HIGH pressures—pressure up to 10,000 psi—and any temperature up to 500° F.

#### MARSH Dial Thermometers...

because they offer the precision and accuracy a precision industry demands. Most complete line; wide temperature ranges, dial sizes, patterns, finishes.

All Marsh products available with AND threads

# MARSH

New catalog covers all details

MARSH INSTRUMENT COMPANY, Division of Colorado Oil and Gas Corporation, Dept. G, Skokie, Ill. • Marsh Instrument and Valve Co. (Canada) Ltd., 8407 103rd St., Edmonton, Alberta • Houston Branch Plant: 1121 Rothwell St., Sect. 15, Houston, Texas

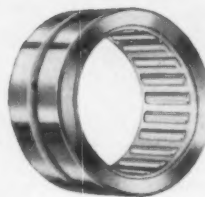
For More Information Write No. 302 on Place Mark Card—Page 32

## Announcing 2 NEW SERIES OF

# ORANGE

### Cage Type NEEDLE BEARINGS

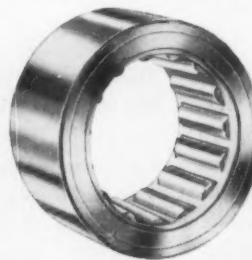
For applications requiring maximum radial capacity



#### MC SERIES

The MC Series is interchangeable dimensionally with standard needle bearings, but uses larger diameter and longer rollers for increased load capacity. It provides an extremely compact, high-load, even-running bearing for heavy duty service. Sizes now in production for 1/2" to 2" shaft diameters.

These two new series of needle bearings fill a much-needed place in bearing design for heavy duty service. Both series have relieved-end rollers to minimize high stress concentrations and fatigue at the corners. The rollers are of the square end type for maximum effective roller length. Each roller is retained in pockets of tubular steel cages to maintain alignment while running.



#### HS SERIES

This is an entirely new series of bearings made in inch sizes dimensionally between standard needle bearings and conventional cylindrical roller bearings. The HS Series is heavier-sectioned than the MC Series and provides higher load capacity for applications where space is available. Sizes now in production for 1" to 2" shaft diameters. Additional sizes under development.

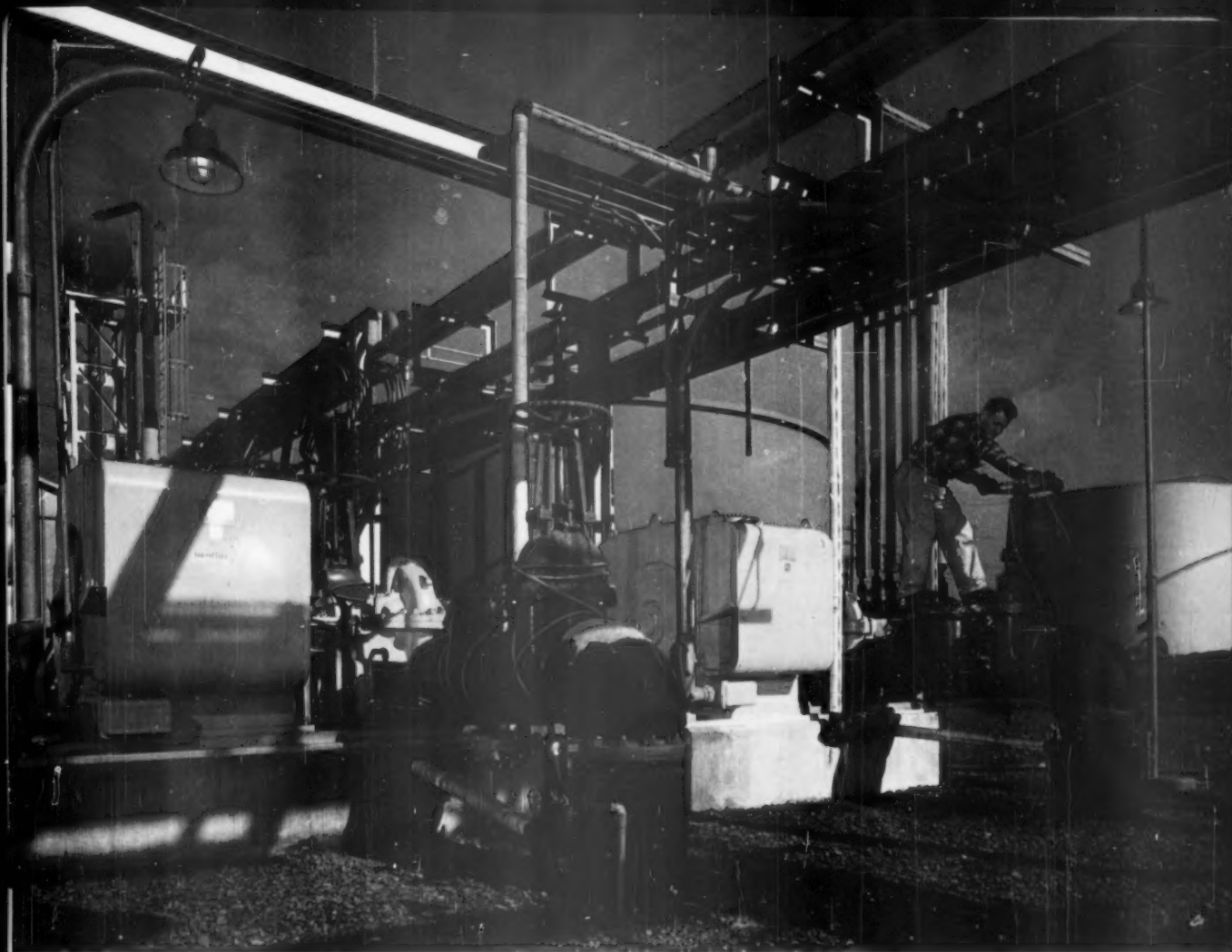
Write for engineering Specifications.

ORANGE ROLLER BEARING CO., INC. 554 Main St., Orange, N.J.

For More Information Write No. 303 on Place Mark Card—Page 32

For More Information about ad on facing page  
Write No. 304 on Place Mark Card—pg. 32→  
**PURCHASING**





## CONTROL CORROSION

Severe weathering, critical chemical exposures even at elevated temperatures, and many other corrosion problems can be controlled by a Truscon system specifically engineered for the job. Maximum protection at the lowest cost per square foot per year is the prime consideration of every Truscon recommendation.

When you consult Truscon you get a written

specification for proper surface preparation and painting, plus assistance in application and inspection methods. Interior or exterior surfaces, metal or concrete, machinery, buildings, bridges, or tanks, can all be protected by a Truscon coating system. Call the branch nearest you or write Truscon Laboratories for specific information.

# TRUSCON

Industrial Maintenance Division of  
Devco & Reynolds Co., Inc.  
Detroit 11, Michigan



*Laboratories*



TubeXperience in action



**STST\***

\*Superior Tool Steel Tubing

## ODDS: 1000 TO 1 TO CUT COSTS, IMPROVE PERFORMANCE IN 1001 DIFFERENT APPLICATIONS

Superior tool steel tubing is an excellent material for tools, but equally good for 1001 other applications. Odds are that it will cut costs and improve performance wherever it is used. Type E-52100, an oil hardening grade of high-carbon and chromium alloy steel, has been widely used for such diverse applications as thread guides on hosiery knitting machines; nylon yarn guides, ball bearing races, nozzles for blast cleaning equipment, gear and pinion parts, dental instruments and extrusion mandrels. Type E-1095, a high-carbon steel tubing, is serving

as applicators for jewelers' oilers, leather and paper punches, and surgical instruments.

Perhaps you have an application that can benefit from high strength and hardness, good wear resistance, abrasion resistance, shock resistance, and notch toughness. In that case, consider Superior tool steel tubing before you go any farther. It could give you a better product at a lower cost. Send for Data Memorandum #14, a handy guide to your thinking. Superior Tube Company, 2034 Germantown Ave., Norristown, Pa.



**Superior Tube**  
The big name in small tubing

NORRISTOWN, PA.

*All analyses .010 in. to 5/8 in. OD—certain analyses in light walls up to 2 1/2 in. OD*

West Coast: Pacific Tube Company, Los Angeles, California • FIRST STEEL TUBE MILL IN THE WEST

For More Information Write No. 305 on Place Mark Card—Page 32



# THIS MAN KNOWS THE DIFFERENCE



## Pipe lined with TEFLON® provides plant savings of \$60,000 per month

In a plant manufacturing a chemical intermediate, excessive maintenance costs and product losses ran as high as \$60,000 per month. Such frequent failures occurred in the process involving corrosives at high temperatures and pressures that on-stream time averaged only 75% during the first six months of operation. After a period of testing, more than 1500 feet of pipe lined with Du Pont TEFLON TFE-fluorocarbon resin were installed. Result: No failures of lined pipe occurred, though some of the pipe has been in service over 2 years.

TEFLON TFE resins are unaffected by HCl liquid and vapors, fuming nitric acid—white or red—hydrofluoric acid, organic solvents and reagents. TFE resins are rated for use up to 500° F. Their non-adhesive surfaces prevent plugging by high-viscosity materials. TFE resins do not shatter under vibration, thermal or physical shock.

The liner flared over the flanges provides protection for the steel from the process fluid and eliminates the need for additional gasketing. Installation costs are further reduced because the pipe is equipped with standard flanged fittings which are easily connected. And the need for careful aligning, hanging, welding and other special procedures is eliminated.

You can insure long service life, greatly reduced maintenance and downtime, and greater plant safety by specifying pipe lined with TEFLON TFE resins. For more details on properties and performance send for the new bulletin on Lined Pipe... and for more general information, ask for the fact-filled booklet "Designing with TEFLON". Write to: E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department T-50620, Room 2526, Du Pont Building, Wilmington 98, Del.

In Canada: Du Pont of Canada Limited, P.O. Box 660, Montreal, Que.



BETTER THINGS FOR BETTER LIVING...THROUGH CHEMISTRY

**TEFLON®**  
FLUOROCARBON RESINS

TEFLON is Du Pont's registered trademark for its family of fluorocarbon resins, including TFE (tetrafluoroethylene) resins and FEP (fluorinated ethylene propylene) resin.



## President's Message

(Continued from page 74)

outstanding magazine in each district would be of much greater interest to advertisers—both locally and nationally—and that overall income would increase rather than decrease. Subject matter and editorial content in such district magazines would, of necessity and by sheer demand, improve over that of most, if not all, of the local magazines.

Now I don't think all of our problems or challenges are to be found in the local associations and districts.

For instance, one of the convention committee's major responsibilities is the Inform-A-Show. Here it has a very difficult problem. For one of the chief complaints about the Inform-A-Show has been that it has not informed. In my opinion, the complaint is justified.

Our members who attend the convention come from every kind of industry. Their problems and interests vary and include everything imaginable. This has the

effect of reducing the number of people with a common interest in very many of the same things.

We are all familiar with the packaging show—one of the very largest of product shows. But most of the people who go to the packaging show have a common interest in packaging. The same is true of the other large and successful shows.

I hope our convention committee can come up with some answers as to how we can produce an Inform-A-Show that does inform. However, it is also conceivable that it may not find the answers and may ultimately recommend that it be discontinued.

Such a recommendation, if it should come, will present some problems to over-all N.A.P.A. income. During the past five years, the net return from the Inform-A-Show has been slightly over \$2 per member per year. While this amount is substantial, it, plus dues, has not really provided the income that many believe we should have had.

I'm sure you purchasing agents know that the cost of everything

has gone up and there appears to be no foreseeable reversal of the trend. Likewise, the cost of operating and maintaining N.A.P.A. and its numerous services has gone up. Our membership is clamoring for services from the national association.

Many of these demands have not been met because we have not had the money. We are, therefore, at the crossroads. We must decide whether we continue as we are with further curtailment inevitable—if the Inform-A-Show is discontinued or not—or whether we increase dues sufficiently to enable us to expand those programs and services that seem logical and in keeping with our ever-increasing professional obligations.

To me, the course is clearly marked for us. We must increase our dues. The only questions are: When and how much? It may take some figuring to determine how much. As to when, I'm positive the answer is very soon.

—By Thomas O. English, General Purchasing Agent, Aluminum Co. of America.



**LS**  
**EQUIPMENT SELECTOR**  
ONE SOURCE FOR THE COMPLETE LINE OF MATERIALS HANDLING EQUIPMENT  
... a COMPLETE COST-SAVING HANDLING GUIDE  
**LS LEWIS-SHEPARD**  
The MASTER Line — The COMPLETE Line of Materials Handling Equipment  
222 WALNUT STREET — WATERTOWN 72, MASS.

This handy reference describes Lewis-Shepard's complete line of "manually-operated," "intermediate" and "all-electric" equipment. Here is everything you need for a fully-integrated materials handling system. Write today for your free copy of L-S Condensed Catalog 80-204.

**LS LEWIS-SHEPARD®**  
676 Walnut Street, Watertown 72, Mass.

For More Information Write No. 307 on Place Mark Card—Page 32

CONSISTENTLY PERFECT FOR COMMERCIAL AND PRECISION APPLICATIONS

# AVON

## FINE PITCH GEARS

(AND SUB-ASSEMBLIES)

- ✓ "Specific" for electronic equipment, control components, small tools, meters, and UNCOMPROMISING SPECS.
- ✓ SPECIAL: Internal, external, helical, and spur gear tooth grinding; also shaved tooth gears.
- ✓ NOTE: AVON is fully equipped for development and processing of precision sub-assemblies.

- Exacting tolerances held from commercial grade to ultra precision.
- Generated in wide range of steels, non-ferrous metals, and non-metallic materials.
- Capacity range: 12 to 200 d.p., and maximum O.D. of 7 1/2".

**AVON: A Dependable Source for Fine Pitch Cut Gears**

AVON has every precision modern facility for generating consistently perfect Fine Pitch gears to your exact specifications . . . in either precision or commercial grades; standard or special . . . in ALL types, ALL classes, from ALL materials.

**SUPER FINISH:** AVON has the most modern finishing equipment available to do gear tooth grinding or shaving on internal, external, helical or spur gears. Almost unbelievable close tolerances are held for that extra touch of perfection . . . whether your order is for one piece or a million.

**INSPECTION:** AVON has the finest, modern testing and checking equipment available to assure you of micro-assembly of your metal critical units.

**SUB-ASSEMBLIES:** Totally modern inspection equipment and every AVON sub-assemblies. You get the best of both worlds in every unit!

AVON has over fifty years aggregate engineering experience. We will be glad to work with you on any development project requiring Fine Pitch cut gearing or sub-assemblies. You can depend on AVON. Send drawings or descriptions for free estimates.

**PRODUCTION - EXPERIMENTAL - CONSULTING**

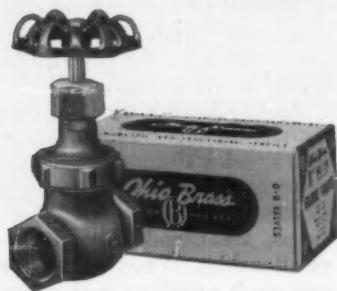
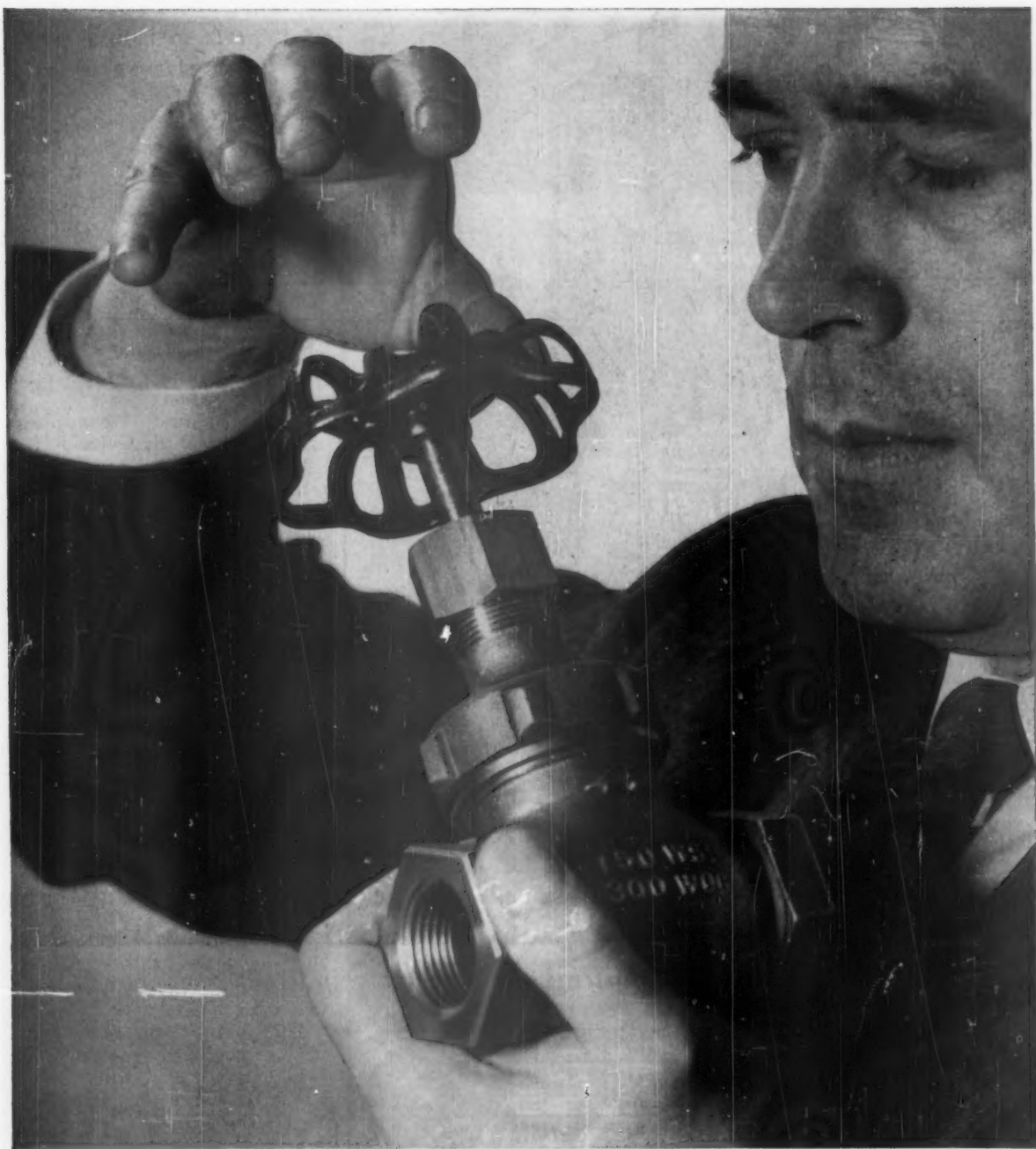
# AVON

GEAR AND ENGINEERING CO.  
"The Company Geared for the Space Age"

2007 Rice Street • Melrose Park (Chicago Suburb), Illinois

For More Information Write No. 308 on Place Mark Card—Page 32





**MEN WHO OPERATE VALVES** like the *sure grip* they get on an O-B handwheel—find it's contoured to fingers, safely non-heating and won't slip under wet or greasy grasp! Just one of many advance-planned features you get by standardizing on the complete O-B bronze valve line. Ask your distributor for the valve in the orange-and-black box.

OHIO BRASS COMPANY • Mansfield, Ohio

**O-B VALVES**



10073-V

JUNE 20, 1960

For More Information Write No. 309 on Place Mark Card—Page 32

241





use **RCA**

## "PREMIUM" TUBES

*for top reliability in critical industrial applications*

Where maximum reliability is a must, protect your equipment by using RCA "Premium" Tubes. These premium-quality tubes are engineered and tested to the most exacting military and industrial standards...they're available from your RCA Industrial Tube Distributor.

Tight quality control in the selection of materials and parts plus stringent and continuous testing maintain the high quality and dependability of every RCA "Premium" Tube. You get more out of RCA "Premium" Tubes because RCA puts more into them.

PROTO-TYPE	"PREMIUM" TYPES
OA2	6073 • 6073-WA • 6073/OA2 • 6626/OA2-WA
2D21	5727 • 2D21-W • 5727/2D21-W
6AK5	5654 • 5654/6AK5-W • 5654/6AK5-W/6096
6AL5	5726 • 5726/6AL5-W • 5726/6AL5-W/6097 • 6663/6AL5
12AT7	6201 • 12AT7-WA • 6679/12AT7
12AU7	5814-A • 5814-WA • 6189/12AU7-WA • 6880/12AU7-A
12AX7	5751 • 5751-WA • 6681/12AX7

The table above lists the "Premium" types pictured above together with their prototypes. For a complete list of RCA "Premium" Tubes, get in touch with your RCA Industrial Tube Distributor. He'll give you immediate, off-the-shelf delivery of any types you may need.



**RADIO CORPORATION OF AMERICA**  
Electron Tube Division  
Harrison, N. J.

## Reports to Management

(Continued from page 106)

### Personnel Statistics

The Activity Report describes to management the general conditions, prices, trends, and savings. It also makes general comments about plant operation and cost improvements.

The Purchasing Savings Report tells of the savings that have been accomplished through renegotiation, combining requirements, use of new sources, better utilization of inventories, and value analysis.

The Purchase Commitment and Personnel Statistics Report is an accounting of the purchase and change orders placed and the purchasing personnel used.

Whether a report is to be oral or written depends on what is to be reported. Thus, before determining the means of expression, we must answer these questions:

**What does management want us to report?**

**What do we want management to know?**

Although the answers to these questions usually coincide, they are not identical by any means. For several reasons, any manager tends to over-communicate, and purchasing agents are not exempted from this tendency. We tend to feel that if only management had our job knowledge, our modest requests for increases in force, overtime allowances, and early purchasing schedules would automatically be approved.

I think you'll agree that management is primarily interested in performance and cost. Items such as personnel requirements, savings, vendor ratings, improved processes, market trends, etc., are of interest to management only as they effect purchasing performance and cost. However, this is quite an over-simplification.

As purchasing agents, you are usually trying to sell management a way of reducing costs or improving performance. You quickly find yourself swimming in terms, ideas, and rather complex relationships. When this happens, you grab anything and everything—statistic, analysis, graph, written report, and associates.

(Please turn to page 244)



Cut storage costs . . .

Save floor space with

# HALLOWELL ERECTOMATIC® SHELVING

Only ERECTOMATIC gives you these features:



**Quick Shelf Installation.** Position shelf support. Slide in shelf, press latches. Takes only seconds. No tools needed.



**Straight-in, Straight-out Shelf Change.** No tilting, unloading, disturbing other shelves. No removing bin fronts, dividers, etc.



**Full Use of Shelf Area.** No tees, no angles. Beaded posts let you make use of full shelf width. (And reduce cuts and snagged clothes.)

GET THE FULL STORY IN NEW FREE CATALOG

**SAVES up to 40% in erecting costs**  
Erectomatic goes up faster than any other shelving. Saves as much as 40% in man-hours!

**SAVES up to 20% in storage area**  
Individually adjustable shelves eliminate waste space between shelves where size of loads vary. Store more in less floor space.

COLUMBIA-HALLOWELL Division SPS  
Jenkintown 31, Pa.

Please send me the Hollowell Erectomatic Catalog

NAME \_\_\_\_\_  
Please Print

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

COLUMBIA-HALLOWELL Division

**SPS**

JENKINTOWN 31, PA. • SANTA ANA, CALIFORNIA

*where reliability replaces probability*

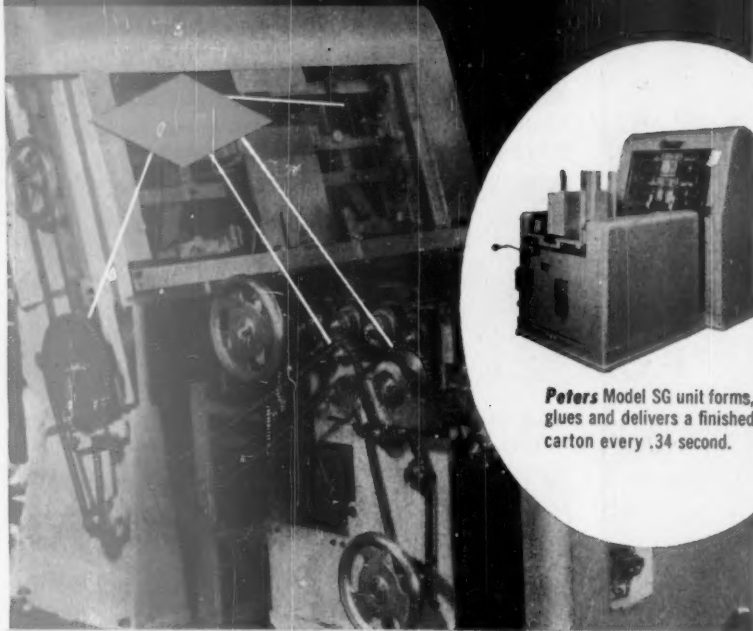


# Peters Packaging Machine

synchronized by

## DIAMOND Roller Chain

delivers 175 cartons a minute



Peters Model SG unit forms, glues and delivers a finished carton every .34 second.

◆ A small error in split-second timing could cause a monumental snarl of cartons, glue and machine parts. To insure *precise synchronization* and dependable, trouble-free performance, Peters Machinery Company, Chicago, Illinois, specifies **DIAMOND Roller Chain** for high-speed packaging equipment.

The proven strength, durability and high dimensional accuracy of **DIAMOND Roller Chain** offer many opportunities to improve and simplify machine design . . . to solve conveying, timing and power transmission problems.

Write for catalog containing complete information on **DIAMOND Roller Chain and Sprockets**. Engineering assistance is available.

### DIAMOND CHAIN COMPANY, INC.

A Subsidiary of American Steel Foundries

Dept. 521 • 402 Kentucky Ave., Indianapolis 7, Indiana  
Offices and Distributors in all Principal Cities

## DIAMOND



## ROLLER CHAINS

## Reports to Management

(Continued from page 242)

I'm sure you'll agree that any big idea or extensive change usually requires both a verbal and written explanation. It would be difficult, if not impossible, to define specifically when a report should be one or the other or both. As an alternative, I'd like to review some of the virtues and liabilities of these two means of communicating.

**An oral report** is direct person-to-person communication. Properly done, it is the most effective means of selling an idea. In my opinion, the important virtues of oral reporting are:

- (1) as a timesaver
- (2) its adaptability to circumstances
- (3) the personal touch.

The disadvantages of the oral report can be serious depending on the speaker and listeners involved. Unfortunately, oral expression lends itself to misunderstandings—semantic and otherwise. The emotion and emphasis attached to the spoken word can easily work for or against your idea or recommendation.

**A written report** is an effective tool in presenting complex ideas and relationships. It lends itself to good organization of ideas. The extra time required for a written presentation is frequently worthwhile in the fewer misunderstandings that ordinarily occur.

In addition, a written report is a permanent record. And ideas can be presented on paper in a more neutral fashion, with almost no regard to when and by whom the report will be read.

The most serious disadvantages of the written report are that it encourages wordiness and can be a time-waster.

To sum up: When trying to sell an idea, there are important advantages to be gained from oral and written reports. Being conscious of the pros and cons of speaking and writing and your own habits of expression may help you decide whether to open your mouth or pick up a pencil.

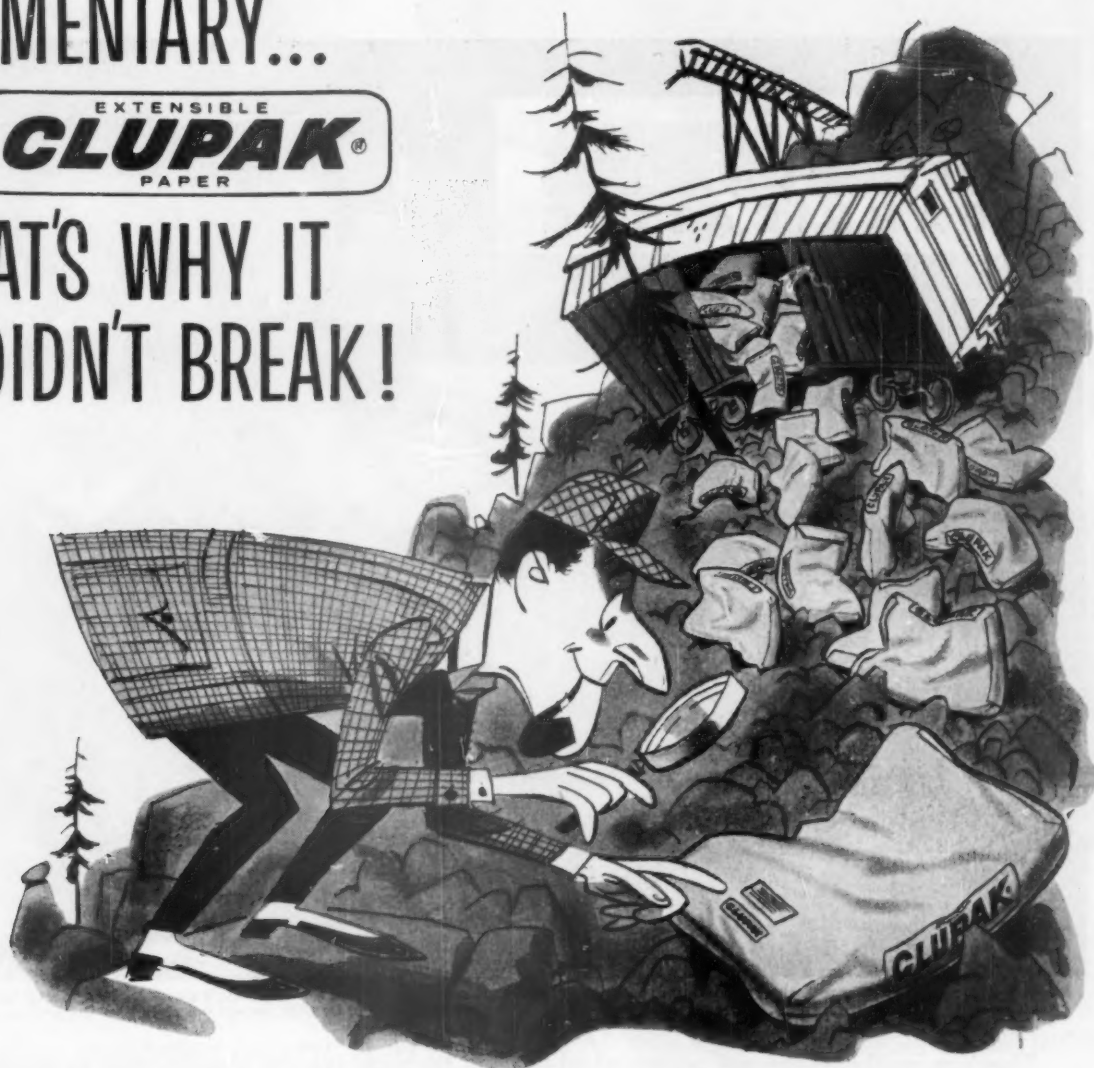
—By Frederick J. MacDougall,  
Assistant to Director of Purchases,  
Allis-Chalmers Manufacturing Co.



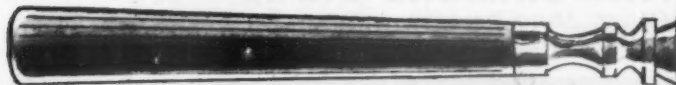
# ELEMENTARY...



## THAT'S WHY IT DIDN'T BREAK!



New CLUPAK extensible paper offers multiwall buyers a happy choice . . . Because CLUPAK extensible paper has a patented, built-in stretch and "give," it simply absorbs most shocks and strains that rip, split or tear conventional kraft. By specifying CLUPAK extensible paper in your kraft bags, you solve your breakage problems once and for all. And multiwalls of CLUPAK extensible paper fill faster, palletize better and handle easier.



Millions of these new multiwalls have proved the advantage of this tougher, stronger paper. Plan a trial shipment of multiwalls, made of CLUPAK extensible paper, as part of your next bag order. Use the CLUPAK trademark when ordering and look for it on the bags. Only then can you be sure the bag paper meets the rigid strength specifications established by Clupak, Inc. for your benefit.

\*Clupak, Inc.'s trademark for extensible paper manufactured under its authority and satisfying its specifications. Clupak, Inc., 530 5th Ave., N.Y. 36, N.Y.



For More Information Write No. 312 on Place Mark Card—Page 32



## SOLVING MATERIAL DESIGN PROBLEMS FABRICATING



**Buy the parts not the problems.** From large and unusual shapes to parts so small you inspect with a jeweler's glass... CDF's special fabricating facilities can do your job faster, more economically. Every part shown above is fabricated by CDF, except the etching of the printed circuits.

There's an excellent chance you can save on set-up and production time, and reduce unit costs by asking CDF to give you an estimate on final fabrication of laminated plastics, vulcanized fibre and electrical insulating materials.

Our machines, all 2,000 of them, are set up for just one purpose—the forming, machining and molding

of the many types of materials that we produce.

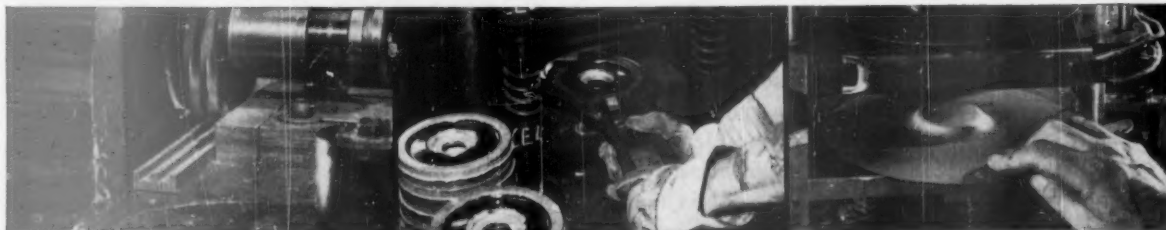
Most important of all, you can combine economy with the exact properties you're looking for. CDF offers you a choice of materials from the industry's widest selection of laminated plastics, vulcanized fibre and electrical insulating materials. Check your Sweets PD file or write for General Folder 60.



## CONTINENTAL-DIAMOND FIBRE

A SUBSIDIARY OF THE ~~Buhl~~ COMPANY • NEWARK 41, DEL.

In Canada, 46 Hollinger Road, Toronto 16, Ont.



**Machining** low-cost tracks for sliding glass doors. Made by CDF from Diamond vulcanized fibre. It's tough, yet light in weight.

**Molding** automobile timing gear blanks made from CDF's Celoron molding material for maximum wear and a minimum of noise.

**Postforming** back-up disc for a sander. Made from a Dilecto laminated plastic to get maximum toughness and resiliency.

For More Information Write No. 313 on Place Mark Card—Page 32

For More Information about ad on facing page  
Write No. 314 on Place Mark Card—pg. 32→

**PURCHASING**





In this fine contemporary AMERICAN

stainless tableware

quality begins with

**Superior**

STAINLESS STRIP STEEL

Excellent formability—giving the designer free range for creative styling ... ever-bright luster for lifetime beauty ... stay-new appearance, always! These SUPERIOR Stainless qualities are backed by *responsibility in depth* to our customers—for precise uniformity in coil to coil, dependable deliveries, broad technical service. Write us on *your* stainless needs.



The stainless tableware pictured is  
manufactured by ONEIDA SILVERSMITHS,  
Oneida, N. Y.



**SUPERIOR STEEL DIVISION**

OF  
COPPERWELD STEEL COMPANY  
CARNEGIE, PENNSYLVANIA

For Export: Copperweld Steel International Company, New York



# Purchasing People In The News

(Continued from page 57)

Appointment of **S. C. Bielawski** as West Allis Works purchasing agent, Industries Group, has been announced by **Allis-Chalmers, Milwaukee, Wisc.** In his new post he succeeds **A. D. Foote**, who has



**S. C. Bielawski**

been named manager of materials. Mr. Bielawski had been assistant to the works purchasing agent since 1955. He came to Allis-Chalmers in 1936 and was named tractor purchasing agent in 1953. In other West Allis Works purchasing department changes, **D. E. Bender** becomes assistant purchasing agent, electrical section, and **F. E. MacDonald** assistant purchasing agent, office equipment and supplies section. Mr. Bender had been assistant purchasing agent of office equipment and supplies since 1955 and prior to that he was assistant purchasing agent of foundry products and supplies. Mr. MacDonald had been assistant purchasing agent, electrical section, since 1957 and before that worked in the expediting section, West Allis Works.

**John Ricca**, formerly general purchasing agent for Arabian American Oil Company and Aramco Overseas Company, has been appointed manager of purchasing and traffic for the **Oasis Oil Company of Libya**, a wholly owned subsidiary of the Ohio Oil Company.

After graduating from Arizona State College with a B.A. degree in business administration, where he received the college president's Outstanding Student Award, Mr. Ricca joined Richfield Oil Company as a distributor in 1938. After two years of teaching he attended Harvard Business School. From 1942 to 1945 he served as administrative assistant and personnel manager for the Army Construction Division in Egypt, Sudan and Eritrea. From 1945 to 1959 he worked in various assignments with Arabian American Oil Company and Aramco Overseas



**John Ricca**

Company. He spent eight years in Arabia as camp and personnel supervisor, superintendent of community service and assistant manager and coordinator of community services; two years in Lebanon as purchasing agent and representative; three and a half years in Holland as commissary and general purchasing agent and a year in New York as purchasing agent and acting manager. During his service in Lebanon, Mr. Ricca received the Order of Cedars from the Lebanese Government.

**Earl S. Goodwin** has been appointed director of corporate purchases for **Westinghouse Electric Corporation, Pittsburgh, Pa.** Mr. Goodwin who had been manager of the operations department at the Bettis atomic power laboratory since 1955 joined Westing-

house in 1935. He held purchasing positions at South Philadelphia and East Pittsburgh before becoming purchasing agent at the Buffalo, N. Y., plant in 1946. From 1953 to 1955 he was an assistant general manager of purchasing at headquarters. He has a B.S. in business administration from Miami (Ohio) University. He also studied purchasing and metallurgy at Temple University.

**Chrysler Corporation, Detroit, Mich.**, has made a number of appointments within its purchasing department. **William C. Cawthon** has become director-corporate purchasing staff, with responsibility for all corporate purchasing activities. **E. Lloyd**, has been



**E. Lloyd**



**W. C. Cawthon**



**S. M. Baltzly**

named executive assistant to **B. W. Bogan** vice president of the corporation. **S. M. Baltzly** will continue in the position of director-supplier relations to which he was appointed in 1958, and will report to Mr. Bogan.

**Gifford-Wood Company Hudson, N. Y.**, has named **Gerard F. Hart** as materials manager. He will be in charge of production and inventory control, as well as director of purchasing and traffic. **Aller B. Colby** succeeds Mr. Hart as purchasing agent.

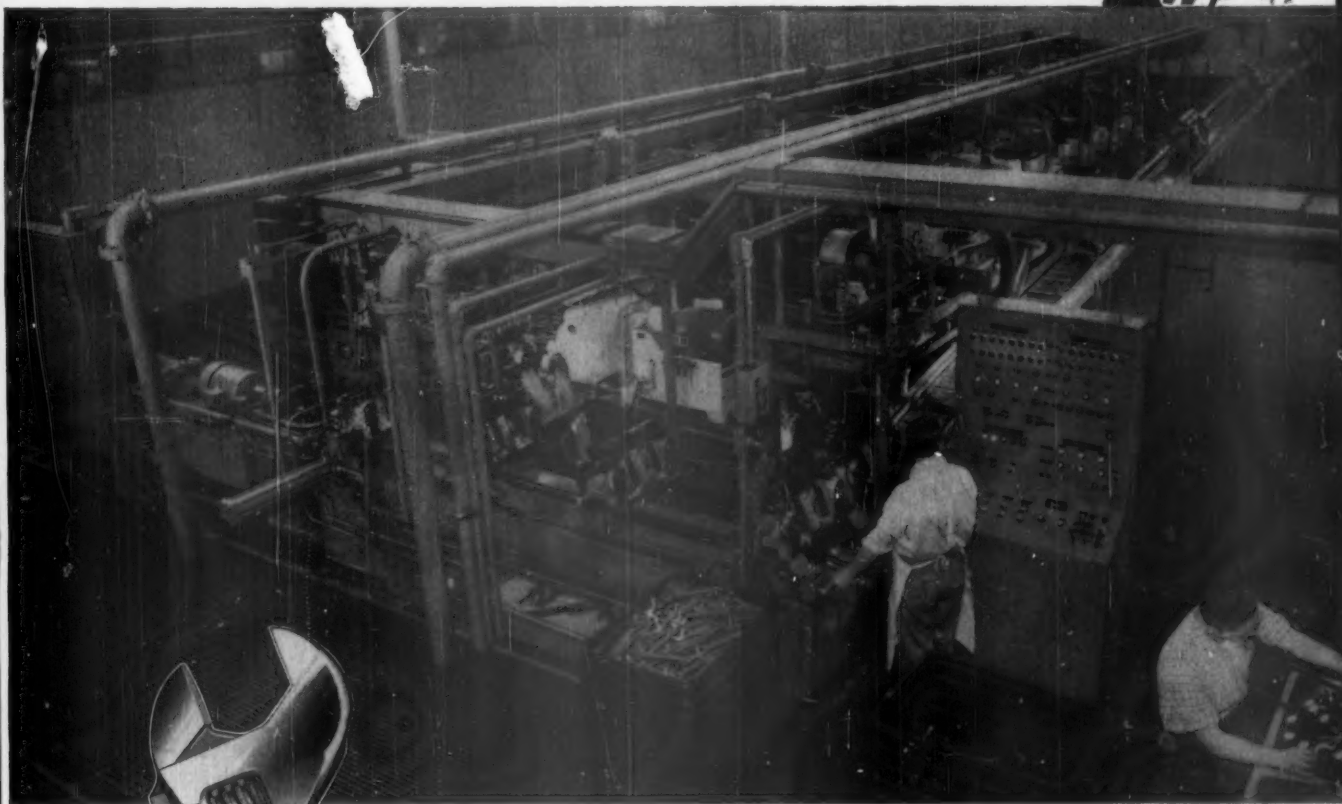
For More Information about ad on facing page  
Write No. 315 on Place Mark Card - pg. 32→  
**PURCHASING**



# It's a Push-Button World at WILLIAMS

that's why **SUPERJUSTABLES®**

**WORK BETTER • LAST LONGER**



● **AUTOMATED MACHINING** guarantees smooth adjustment, exact fit in every wrench. This million dollar transfer machine was designed especially for Williams' Superjustable® wrench production. A push of a button puts 28 stations in operation...consistently machining to uniformly close tolerances. Fully machined wrench heads are constantly checked on special gauges to further insure perfect fit with sliding jaws, worms, pins and springs. No other manufacturer has this automated equipment to so precisely machine wrenches that *work better...last longer.*



Send for New Catalog No. 304. Lists over 4530 Stock Wrenches, Tools and Forgings... the Broadest Line of its kind.



**J. H. WILLIAMS & CO.**  
DIVISION OF UNITED-GREENFIELD CORPORATION  
404 VULCAN STREET • BUFFALO 7, NEW YORK

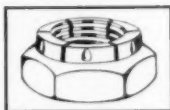
**TOOLS of INDUSTRY**

*Superjustables® are available in regular or locking styles in sizes ranging from 4 to 24 inches, Black or Chrome finish.*



# FLEXLOC thin nut

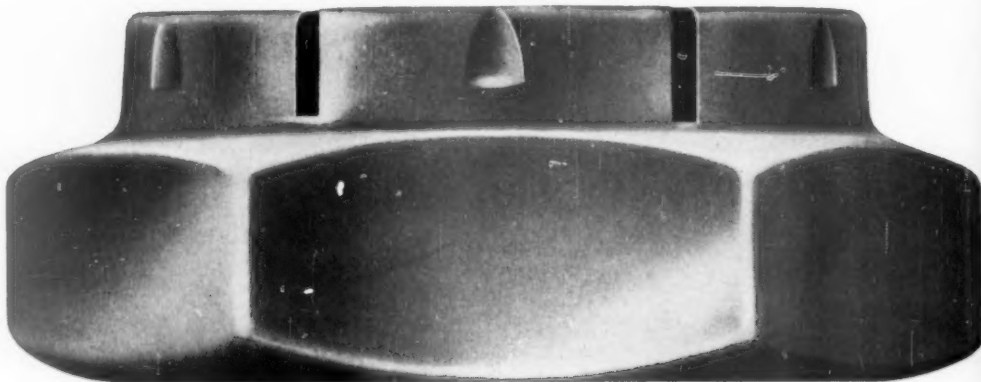
cuts assembly costs,  
simplifies handling



As the name clearly indicates, a locknut's job is to hold tight *indefinitely*. The FLEXLOC thin nut—with each thread, including those

in the locking section, carrying its full share of the tensile load—does precisely that...and more.

30% lighter and lower, this self-locking fastener saves weight and space, frequently fitting where clearance is insufficient for standard height nuts.



And when it comes to economy, FLEXLOC thin nuts are tough to match. First, since you use shorter bolts with them, a shorter distance—and less time—is required to run the nuts home. And second, since they are 1-piece fasteners—no lock-washers, jam nuts or cotter pins to put together—assembly time and costs are even further reduced... and delivery, inventory and handling are greatly simplified. What's more, FLEXLOC thin nuts can be readily removed and repeatedly reused.

In sizes from #6 to 1½ in., FLEXLOC thin nuts are available for immediate delivery from your authorized distributor, who consistently maintains a full supply. For complete information, see him or write STANDARD PRESSED STEEL Co.—manufacturer of precision threaded fasteners and allied products in many metals. INDUSTRIAL FASTENER Division, SPS, JENKINTOWN 31, PENNSYLVANIA.

**SPS**

where reliability replaces probability



# Pop Out Perfect Products

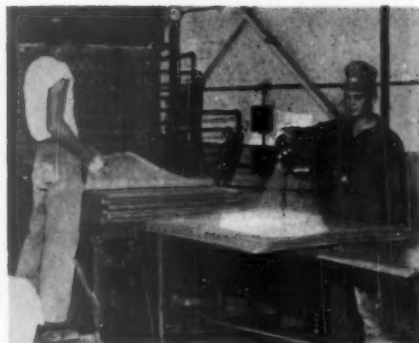


## Dow Corning Silicone Mold Lubricants Assure Finer Details, Fewer Rejects

Toys and dolls, mats and heels, tires and tile — all kinds of rubber products — pop out cleanly, time after time after time, from molds lubricated with Dow Corning Silicones. These silicone release agents give uniform stick-free release . . . assure sharp surface detail, reduce rejects to a bare minimum, increase profits.

Dow Corning mold lubricants help you realize noteworthy savings, too . . . practically eliminate the need for cleaning molds. In turn, mold downtime is reduced . . . service life increased. New production efficiency, better looking products, lower maintenance costs, less waste . . . advantages like these have led more and more molders of rubber products to standardize on Dow Corning silicone release agents.

Easy and economical to use, Dow Corning mold lubricants are available in a variety of forms . . . for all types of rubber . . . for all types of molds.



Water-dilutable emulsions, solvent soluble fluids, greaselike compounds, different forms for different uses. Whatever you make . . . if it's molded of rubber — you can count on Dow Corning development engineers to formulate a silicone mold lubricant that'll release it efficiently and economically!

**More Cost-Saving Silicones . . .** In other areas of the rubber industry, too, Dow Corning Silicones have proved to be time and money savers: as electrical insulation



for mill and mixer motors; as anti-adhesive coatings for bags, containers and inter-leaving; as heat-resistant paints that also resist weathering and corrosive atmospheres; as lubricants for ball bearings; and as Silastic® gums and bases for compounding silicone rubber stocks to meet severe performance requirements. For more information about silicone release agents or other silicones for the rubber industry, write Dow Corning, Dept. 7406.

Your nearest Dow Corning office is the number one source for information and technical service on silicones.



**Dow Corning CORPORATION**  
MIDLAND, MICHIGAN

ATLANTA BOSTON CHICAGO CLEVELAND DALLAS LOS ANGELES NEW YORK WASHINGTON, D. C.

For More Information Write No. 317 on Place Mark Card—Page 32





**Perfect  
Packaging  
at Low Cost!**

## ONE MORE CLEVELAND CONTAINER DEVELOPMENT

### **A container that does a lot for the product!**

Insecticides and chemicals require a container that dispenses correctly and sells on sight! This container, made of durable chip-board, has a cut-out metal top with a new style plastic sifter insert. Bottom of rust resistant tin plate.

Hole in top, before assembly of plastic closure, permits fast loading. No seaming operation necessary. Easily labeled individually, in multiples, or by spiral winding, this sturdy container protects contents... is attractive and inexpensive!

Our Engineering Department can assist you in designing the ideal container for your product. Ask them!

Designed to combine the best features of plastic and metal in one functional top! Sifter smoothly dials openings to sift, pour, or closed positions. Safe-sealed until special section is pressed out. Metal top and bottom may be natural tin plate or decorated in colors for added beauty.



## THE CLEVELAND CONTAINER

COMPANY

Plants and  
Sales Offices:  
Cleveland  
Detroit  
Chicago  
Memphis  
Los Angeles  
Plymouth, Wis.  
Jamesburg, N. J.  
Fair Lawn, N. J.

6201 BARBERTON AVE. • CLEVELAND 2, OHIO

ALL-FIBRE CANS • COMBINATION METAL AND PAPER CANS  
SPIRALLY WOUND TUBES AND CORES FOR ALL PURPOSES

CLEVELAND CONTAINER CANADA, LIMITED

Plants & Sales Offices: Toronto & Prescott, Ont. • Sales Office: Montreal

Sales Offices:  
New York City  
Washington, D. C.  
Rochester, N. Y.  
West Hartford,  
Conn.  
Abrasive  
Division  
at Cleveland

For More Information Write No. 318 on Place Mark Card—Page 32

## Management Techniques

(Continued from page 77)

which he acquired, he must develop skill in using management techniques and in working with individuals in his department and throughout his organization. He needs skill in developing himself as part of management and, finally, the skill in developing his subordinates.

Regardless of his intelligence which he inherited and the knowledge and skill which he acquires, a manager of purchasing will achieve nothing until he puts his combination of intelligence, knowledge, and skill to work. His employer may need to give him some incentive to apply what he knows, which should include this fact—each person has the responsibility to apply himself to his job.

### **The Purchasing Climate**

Although there may be some cases in which the real problem confronting the manager of purchasing is within himself, especially in terms of his knowledge, skill, or application, the real problem is more likely to exist within the climate or setting in which he works. All five of the following aspects of the climate surrounding the position of the manager of purchasing must be present in order to solve the apparent day-to-day problems confronting the manager of purchasing: (1) objectives, (2) planning, (3) organization, (4) control, and (5) communication.

**Objectives**—The climate surrounding a position begins with a clearly-stated objective. The manager of purchasing must know the objectives of his organization as a whole. The work of the purchasing agent of the California Institute of Technology, for example, is facilitated by our clear statement of objectives for Caltech as a whole: To integrate teaching and research in engineering and science.

The statement of objectives for a profit-making company should include the statement "to make profits," but the statement of objectives must go beyond this. In the first place, the profits should be "continuing profits." Secondly,

(Please turn to page 256)

For More Information about ad on facing page  
Write No. 319 on Place Mark Card—pg. 32 →  
PURCHASING



**DANGER**  
NO SMOKING  
MATCHES OR  
OPEN LIGHTS

**60° Be SULPHURIC ACID**  
**Capacity 106,000 Gallons**

**U. S. STEEL reports:**

**SMALL VALVE IN 4TH YEAR OF 'ROUND-THE-CLOCK' SERVICE !**

It guards the outlet of one of the world's largest acid tanks for U.S. Steel. Here are the performance facts on this 4" Aloyco Gate Valve (made of Aloyco 20 Stainless Steel): It still shuts off tight. It has required no servicing except for minor packing adjustment. It has been on continuous 24-hour service for 4 years. People who pay for performance only, rely on Aloyco Stainless Steel Valves wherever corrosion is a problem. Want a safe, economical way to handle corrosives? Write: Alloy Steel Products Co., Inc., 1312 West Elizabeth Ave., Linden, New Jersey. 03



**ALLOY STEEL PRODUCTS COMPANY**

Boston • New York • Wilmington • Atlanta • Birmingham • Baton Rouge • Buffalo • Pittsburgh • Chicago • St. Louis • San Francisco • Los Angeles • Seattle





## A PROGRESS REPORT FROM REPUBLIC STEEL...

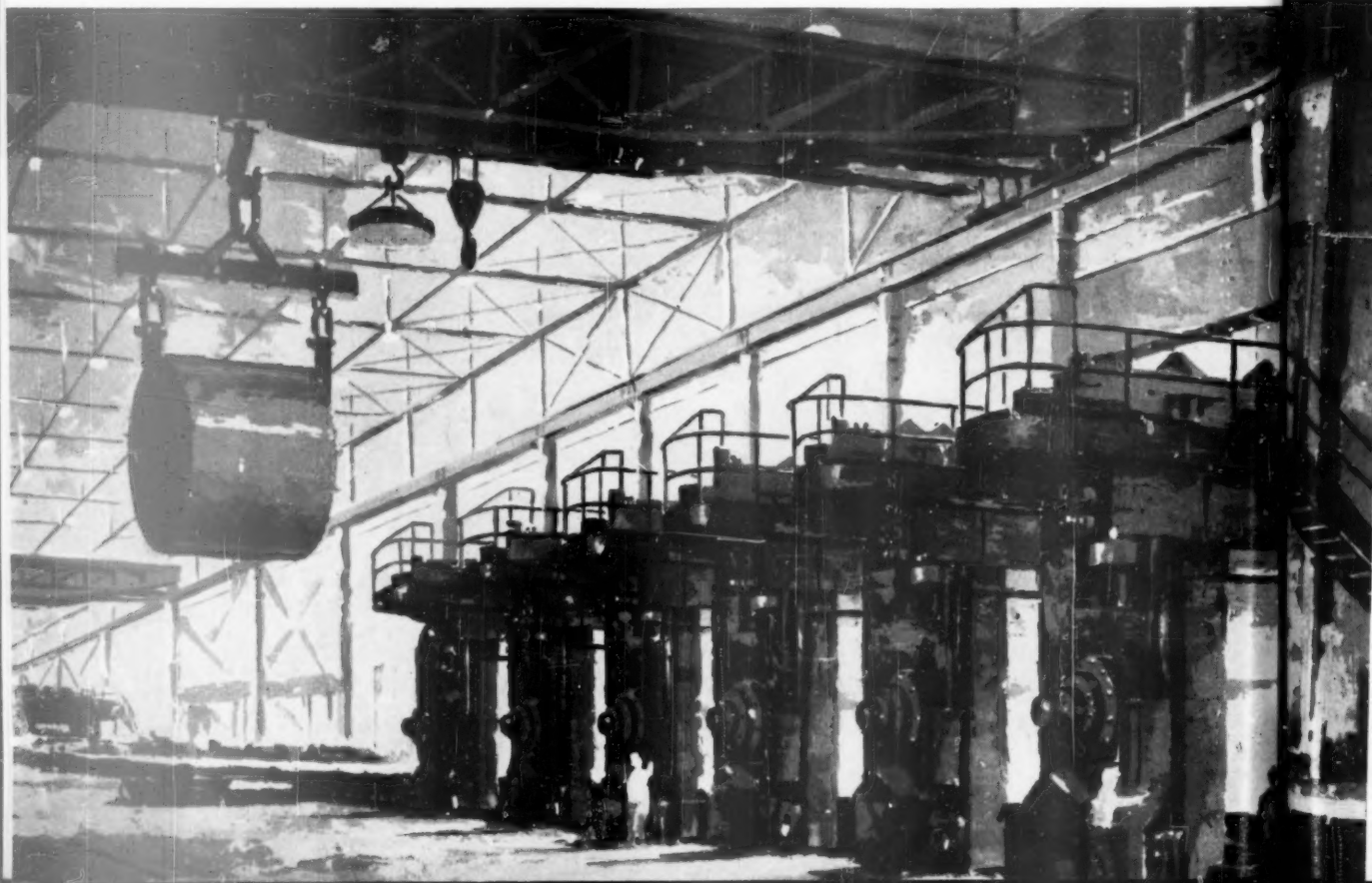
# New 56-inch hot mill to roll special grades of high-performance stainless

The new 56" hot rolling mill in Warren, Ohio—first major project in a new capital improvement program—is of particular significance to companies involved in aircraft or missile work. To be completed late in 1960, this new facility is geared to roll special grades of high strength stainless steel now being developed.

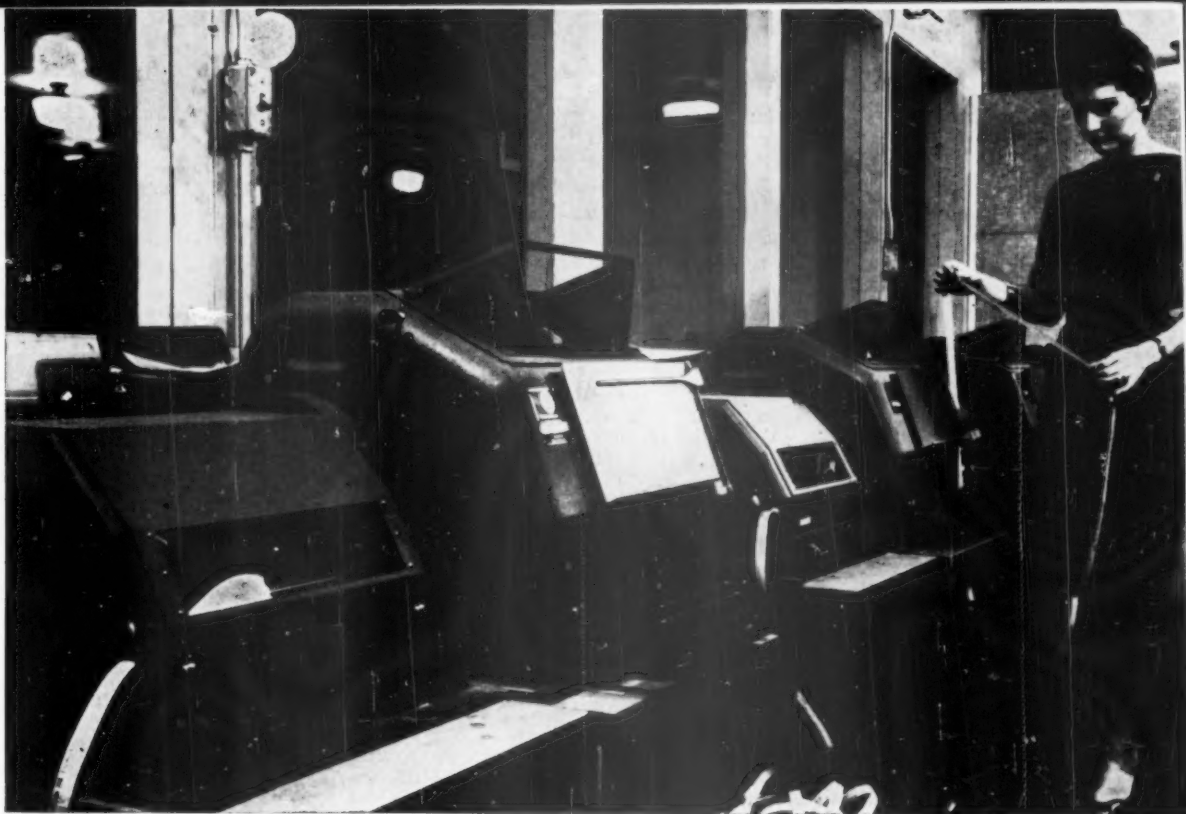
Many such improvements and additions by Republic promise major breakthroughs in quality . . . plus the vastly increased range of sizes, types, gages, finishes, and other specifications that will be required.

This is what Republic is doing now to help improve design, reduce costs, assure a level of performance currently unobtainable.

This mill has additional built-in power to hot roll stainless and other special alloys at proper temperatures and provide industry with large coils which could effect economy in production.







## Automated order processing system Saves you days...Saves you dollars!

As a customer of Republic, you enjoy speed and efficiency made possible by a network of tele-typewriters linking district sales offices to centrally-located service centers.

Your inquiry is transmitted to such a center (via the Cleveland switching center) in a matter of minutes. Here, teams composed of metallurgists, sales order experts, and mill schedule specialists take over. They (1) check specifications against mill schedules, (2) confirm your order, and (3) relay it to the proper mill for scheduling and processing.

In a matter of a few hours your order is placed on a mill. You are alerted to incoming material the morning after shipment is made. Your specifications are filed on paper tapes to cut service time on repeat orders.

Soon to include an automatic system of scheduling and processing within each Republic plant, this program is another example of Republic's continuing effort to improve service to you . . . the customer.



# REPUBLIC STEEL

Cleveland 1, Ohio

*World's Widest Range of Standard Steels and Steel Products*

**Call your nearest Republic sales office for information on:**

**CARBON, ALLOY, AND STAINLESS STEEL • METAL POWDER • TITANIUM • TUBING • CONDUIT**



## Management Techniques

(Continued from page 252)

there must be an indication in the statement of objectives as to how the company expects to make profits, e.g. "To make continuing profits through the sale of quality merchandise in the home appliance field," or, "to make continuing profits through the transportation of merchandise and people," or, "to make continuing profits through the design, production, and sale of office equipment."

The manager of purchasing should also have a clear statement of the objectives of his position and group.

**Planning**—The statement of objectives can be put into practice by proper planning which begins with the establishment of policies in line with the objectives. The function of policies is to spell out the variety of minor objectives which contribute to the over-all objective. In general, policies indicate the direction to be followed, but leave to the various managers some leeway as to spe-

cific methods of accomplishing the desired results.

In order to make policies effective, it is necessary to plan procedures which will insure the achievement of these objectives. For example, a policy to buy as cheaply as possible may require a procedure of competitive bidding in order to make sure that purchases are made at the lowest prices. If the policy is to maintain two or more sources of supply, a procedure for sending bids on each purchase may be inconsistent.

The concept of planning is not a popular one. Planning requires both mental and physical effort. All plans must be changed to meet actual situations in the future. The role of planning is best described as decision-making or problem-solving for the future.

**Organization**—The concept of organization includes a description of the lines of authority and responsibility that exist and a plan for what should exist. The work of any enterprise, either public or private, is achieved through organization.

Specifically, the manager of purchasing must understand and accept his line responsibility to his superior. In addition, everyone, including his superior and other management personnel, must understand and accept the fact that the manager of purchasing and only the manager of purchasing has line authority over his subordinates. He has the sole authority to take disciplinary action on his subordinates; he is responsible for the selection, development, and promotion of his subordinates; he initiates their salary increases, especially for merit.

This line relationship within a purchasing department and from the manager of purchasing to his superior exists in every organization. In addition, in most places the purchasing function as a whole must be classified as a staff service. Everyone within and outside the purchasing group must understand and accept this staff function.

The manager of purchasing and his subordinates should not modify a requisition on their own

(Please turn to page 260)

## AMES DIAL INDICATORS are built by nonconformists

Some people might be shocked to learn that in this day of automation it takes more than one hundred separate hand operations to build a single Ames micrometer. In many respects we are building and assembling these precision instruments exactly as we did fifty years ago.

Why? Because there are some jobs that can still be done better by a pair of skillful, sensitive hands than by the best automated machinery made. As long as this fact holds true we'll refuse—for your sake—to follow the crowd. For Catalog No. 60 write to: B. C. Ames Co., 31 Ames St., Waltham 54, Mass.—in Canada, H. C. Burton Co., 166 Rebecca Street, Hamilton.



Representatives in Principal Cities

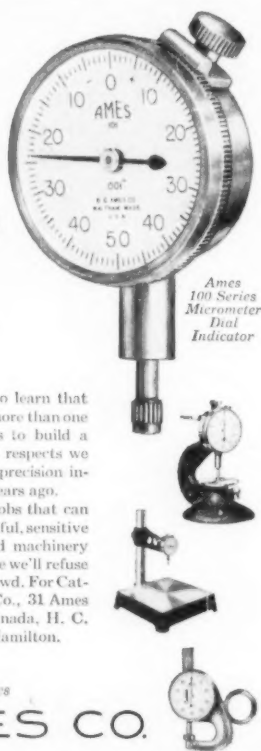
# B. C. AMES CO.

MANUFACTURERS OF MICROMETER DIAL INDICATORS AND GAUGES  
ACCU-FLOW AIR GAGES • TRANSISTORIZED COMPARATORS

For More Information Write No. 321 on Place Mark Card—Page 32

For More Information about ad on preceding page  
Write No. 320 on Place Mark Card—pg. 32

256



Ames  
100 Series  
Micrometer  
Dial  
Indicator

## SKINNER 3-WAY SOLENOID VALVES SOLVE YOUR CONTROL SYSTEM PROBLEMS

Whatever your problem in controls... in machine tool automation, automatic clutching or braking, packaging, instrumentation, laundry equipment, air conditioning, or in any of thousands of applications involving air and hydraulic cylinders or pressurized mechanisms... Skinner has the answers.

Skinner design leadership and quality manufacture of solenoid valves has been proved by universally successful use. And as control problems become more complex, Skinner keeps pace with new designs, new valves, and continued top quality production.

When you specify solenoid valves, specify Skinner. All Skinner solenoid valves are distributed nationally. For complete information, contact a Skinner Representative listed in the Yellow Pages or write us at Dept. 606.



THE CREST OF QUALITY

# SKINNER ELECTRIC VALVES

SKINNER ELECTRIC VALVE DIVISION,  
THE SKINNER CHUCK COMPANY • NEW BRITAIN, CONNECTICUT

For More Information Write No. 322 on Place Mark Card—Page 32

For More Information about ad on facing page  
Write No. 323 on Place Mark Card—pg. 32

PURCHASING





## way out where wire rope had better be good

There's nothing like isolation to point up the job value of a wire rope. It's situations like this that put meat on the clichéd bones of "tried and true."

This instance—multiplied by hundreds in the gamut of industries—has contributed to the fine and lasting reputation of Roebling Royal Blue Wire Rope. A reputation of unparalleled toughness and strength among wire ropes.

Here, and wherever wire rope is put to work, impact, abrasion, shock and crushing

are the "diseases" that kill weak ropes. Royal Blue thrives.

Even if your wire rope distributor were around the corner, you wouldn't be any further ahead with anything less than Royal Blue. You'd be spending more money than you need to.

We want very much to show you how *this* rope can save and save and save. Time. Money. Frustration. For this, write John A. Roebling's Sons, Wire Rope Division, Trenton 2, New Jersey.



**ROEBLING**



Branch Offices in Principal Cities

John A. Roebling's Sons Division, The Colorado Fuel and Iron Corporation



# Quiet...



## **WAGNER Polyphase Resilient Mounted Motors in ratings through 10 horsepower**

Quiet, vibration-free performance is essential when motors are installed in areas where noise must be held to a minimum . . . in hospitals, churches, schools, office buildings, restaurants and similar locations where quiet is needed or wanted.

Such installations have created a need for larger polyphase motors that whisper while they work. Wagner has met this need by expanding its line of polyphase resilient mounted motors to include standard ratings through 10 hp.

You certainly have applications that call for a smooth running motor, cushioned by resilient mountings. To make sure they're quiet, specify Wagner Poly-

phase Resilient Mounted Motors. Only Wagner can provide an entire range of ratings through 10 hp. Constant research and development have kept Wagner up front in electric motor design for more than 65 years . . . made the name Wagner one you can depend on in choosing electric motor drives.

Your nearby Wagner Sales Engineer can help you select the right motor to meet your requirements. There are Wagner branch offices in 32 principal cities.

**Wagner Electric Corporation**  
6360 PLYMOUTH AVENUE, ST. LOUIS 33, MISSOURI

WM60-14



### **SLEEVE OR BALL BEARING**

These motors are furnished with quiet running steel-backed babbit-lined sleeve bearings of high load carrying capacity. Ball bearings can be supplied when desired.



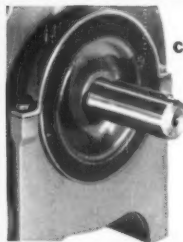
### **CEILING, SIDEWALL OR HORIZONTAL MOUNTING**

You can mount these motors on walls or ceilings by rotating the cradle base 90° or 180°. Motor stays dripproof.



### **NEOPRENE CUSHIONING RING**

Annular mountings of oil-resistant neoprene bonded to steel rings cushion the motor in its cradle base to absorb the small amount of vibration that remains in the most carefully balanced motor.



For More Information Write No. 324 on Place Mark Card—Page 32

258

For More Information about ad on facing page Write No. 325 on Place Mark Card—pg. 32 →

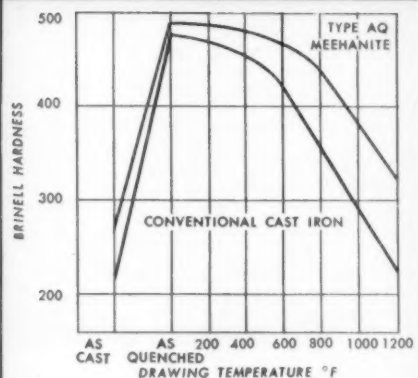
PURCHASING

**N**  
AQ Meel  
terial w  
hardene  
no disto  
tage of t  
improved  
internal  
held clos  
dies, pun  
Type AQ  
other par

The Ame  
Roches  
Atlas Fou  
Bonner I  
Barnett P  
Irving  
Casting S  
and Br  
Centrifug  
Shenan  
Compton  
The Coop  
Mt. Ver  
Crawford  
Portlan  
Dayton C  
**MEE**



# NOW DIMENSIONAL TOLERANCES CAN BE HELD ON HARDENING



Type AQ Meehanite castings, hardened in air, experience considerably less loss in hardness when subjected to elevated temperatures than ferrous castings hardened by conventional means.

## NEW AQ MEEHANITE® . . . keeps distortion to a minimum

AQ Meehanite® is a tough, wear and abrasion resisting material which can be cast to a machinable hardness and air hardened after machining to high Brinell values with little or no distortion, even in massive castings. An outstanding advantage of this new metal is its ability to be locally hardened for improved wear resistance. As no water quenching is required, internal stress is reduced and dimensional tolerances can be held closely. This is particularly important for such parts as dies, punches, cams, rollers, etc.

Type AQ Meehanite is ideally suited for hot forming dies and other parts required to work at elevated temperatures because

it maintains its high hardness even when heated. For this reason, AQ Meehanite castings can be expected to provide good wear resistance where conventional flame hardened parts may soften under repeated temperature influence. See chart above. Large castings can be fully hardened . . . simply . . . economically . . . without oil bath equipment . . . and without dangerous distortions.

Free literature is available on AQ Meehanite. Write to the Meehanite Metal Corporation or contact the nearest Meehanite foundry.

You'll like doing business with a Meehanite foundry.

## MEEHANITE METAL

The American Laundry Machinery Co.,  
Rochester, N. Y.  
Atlas Foundry Co., Detroit, Mich.  
Banner Iron Works, St. Louis, Mo.  
Barnett Foundry & Machine Co.,  
Irvington, N. J.  
Casting Service Corp., LaPorte, Indiana  
and Bridgman, Michigan  
Centrifugally Cast Products Div., The  
Shenango Furnace Co., Dover, Ohio  
Compton Foundry, Compton, Calif.  
The Cooper-Bessemer Corp.,  
Mt. Vernon, Ohio and Grove City, Pa.  
Crawford & Doherty Foundry Co.,  
Portland, Ore.  
Dayton Casting Co., Dayton, Ohio

Empire Foundry Co., Tulsa, Okla.  
Florence Pipe Foundry & Machine Co.,  
Florence, N. J.  
Fulton Foundry & Machines Co., Inc.,  
Cleveland, Ohio  
General Foundry & Mfg., Flint, Mich.  
Georgia Iron Works, Augusta, Ga.  
Greenlee Foundries, Inc., Chicago, Ill.  
Hamilton Foundry Inc., Hamilton, Ohio  
Johnstone Foundries, Inc., Grove City, Pa.  
Kanawha Manufacturing Co.,  
Charleston, W. Va.  
Kennedy Van Saun Mfg. & Eng. Corp.,  
Danville, Pa.  
Lincoln Foundry Corp., Los Angeles, Calif.  
Oil City Iron Works, Corsicana, Texas

Palmyra Foundry Co., Inc., Palmyra, N. J.  
The Henry Perkins Co., Bridgewater, Mass.  
Pohlman Foundry Co., Inc., Buffalo, N. Y.  
Rosedale Foundry & Machine Co.,  
Pittsburgh, Pa.  
Ross-Meehan Foundries, Chattanooga, Tenn.  
Sonith Foundries of FMC, Indianapolis, Ind.  
Standard Foundry Co., Worcester, Mass.  
The Stearns-Roger Mfg. Co., Denver, Colo.  
Vulcan Foundry Co., Oakland, Calif.  
Washington Iron Works, Seattle, Wash.  
Dorr-Oliver-Long, Ltd., Orillia, Ontario  
Hartley Foundry Div., London Concrete  
Machinery Co., Ltd., Brantford, Ontario  
Otis Elevator Co., Ltd., Hamilton, Ontario

MEEHANITE METAL CORPORATION, NEW ROCHELLE, NEW YORK





## Purchase for Profit!

### Campco Polyethylene

A grass catcher must withstand plenty of punishment. And this one, vacuum-formed for Jacobsen Mfg. Co., meets every requirement. It's made from Campco PE-200 Linear Polyethylene sheet and its excellent deep-drawing qualities make possible the formation of unusually high baffles. It is light in weight and its extra high impact strength provides resistance to penetration by stones, nails and glass. Here is further proof that if you want to purchase for profit, specify:

#### CAMPSCO Sheet and Film

division: Chicago Molded Products Corp.  
2717-F Normandy Ave., Chicago 36, Ill.

## Management Techniques

(Continued from page 256)

initiative, but they should be encouraged to make suggestions. Everyone in the organization should look to the purchasing department for advice on the answers to questions such as what should be purchased, when, from whom, and at what price? In short, like any other staff function, the purchasing department keeps its nose in—but its hands off—the operating departments and their problems.

**Control**—A fourth aspect affecting the setting in which the manager of purchasing works is the amount of control exerted. Although the word "control" is unpopular even in companies which manufacture and sell control devices, everyone in management must accept the need for control. The planning for any project or activity should include some planning for control over that project or activity since no plan is self-executing and since few plans will work out as originally conceived. The over-all or-

ganization of an enterprise should be planned for the most effective control. Many procedures can also be planned to give effective control.

For example, at Caltech we have found it desirable to route requisitions through the accounting department on their way to the purchasing department in order to make sure that funds are available for the purchase before the purchase order is issued.

The effectiveness of controls can also be increased by using the exception principle. The exception principle states that the effectiveness of management can be increased by focusing attention on deviations from policy or on unusual cases rather than on controlling every action. The exception principle means that management should concentrate on what is going wrong or what is not going according to plans rather than on reviewing what is progressing according to plans.

One common illustration of the use of the exception principle in purchasing is the use of dollar

(Please turn to page 264)

## Stainless pipe and fittings



## IN STOCK

Your complete stainless piping package is available for immediate shipment in a variety of sizes and analyses.

**PIPE:** 1/8 IPS through 12" IPS seamless and welded schedules 5 - 80

**FITTINGS:** 1/8 IPS through 4" IPS threaded and welding type

**VALVES:** 1/4 IPS — 2" IPS

Also mill shipments of corrosion resistant items up to 48" OD. Send for FREE literature.

## C.A. ROBERTS CO.

*Steel Tube Specialists*

Dept. O-6 • 2401 25th Avenue • Franklin Park, Illinois

**6** Warehouses serving the middlewest

CHICAGO • DETROIT • INDIANAPOLIS • ST. LOUIS • TULSA • KANSAS CITY

For More Information Write No. 326 on Place Mark Card—Page 32

## SAW HOLES Through Sheet or Plate!



No. 1 Hole Saw Kit  
LIST PRICE

**\$62.80**

F. O. B. Chicago,  
Shipping Weight  
10 Lbs.

With a MARVEL No. 1 Hole Saw Kit, you can save time and labor by sawing holes from 3/4" to 2 1/2" diameter in sheet or plate, using an ordinary portable electric drill or a drill press. Saws to cut holes from 9/16" up to 6" dia. are available. MARVEL High-Speed-Edge Hole Saws are heavy duty tools, having a cutting edge of high speed steel welded to a tough alloy steel body to insure fast cutting and long service life. Arbors are heat treated, rugged, and practically indestructible. No. 1 Kit is complete with 3/4", 7/8", 1 1/8", 1 1/2", 1 3/4", 2", 2 1/4", 2 1/2" Saws with necessary Arbors. See your MARVEL Distributor, or write for Hole Saw Bulletin HS-475.

## ARMSTRONG BLUM MFG. CO.

5700 W. Bloomingdale Avenue • Chicago 39, Illinois

For More Information Write No. 327 on Place Mark Card—Page 32





## Steiner Company Announces A New AUTOMATIC Towel Dispenser

Here's the first completely automatic paper towel dispenser . . . the new Steiner Company Serva-Matic.

**All of towels used:** It has no buttons, cranks or levers. You don't even have to tear off the towel. Just pull the exposed end of the towel. The dispenser automatically gives you one unfolded towel that's ready to use.

**Adjustable control:** You set the adjustable control to dispense towels at the rate you want . . . the best rate for your washroom traffic flow. Users take only the

towels they need . . . no grabbing a handful that isn't needed or used and then thrown away.

**Cut towel costs 30%:** No towels are wasted. Fewer manhours are needed to clean up washrooms. Less towel inventory is needed because your supply will last longer. It all adds up to savings of as much as 30% in towel costs. Employees and customers will like the ease and convenience of Steiner automatic paper towel dispensers. Two different grades of towels are available. Your supplier furnishes the dispenser . . . you pay only for the towels you use. For more information write to . . .

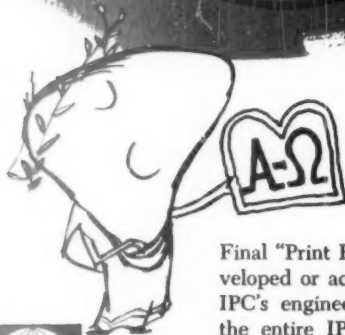
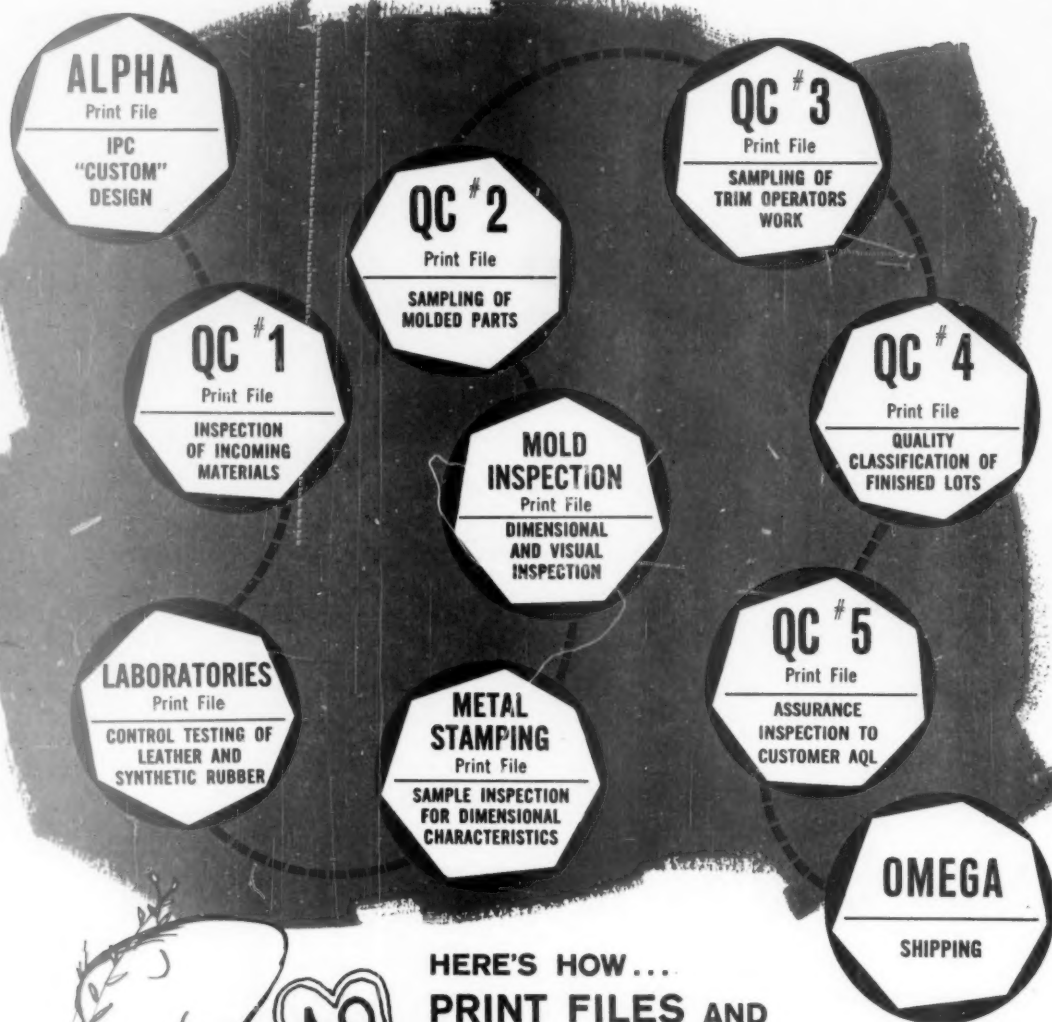


**STEINER COMPANY**

Dept. 60-4, 740 Rush Street • Chicago 11, Illinois



From beginning to end... *and in between...* **IPC** controls quality in manufacturing OIL SEALS... PACKINGS... PRECISION MOLDING



### HERE'S HOW... PRINT FILES AND QC STATIONS

Final "Print Files" for every product developed or accepted for manufacture by IPC's engineers are located throughout the entire IPC plant. These provide a positive, at-hand reference for product quality!

More than this... IPC maintains Q C (Quality Control) stations at strategic locations in the manufacturing line through which every batch of manufactured parts *MUST* pass before they are

committed to shipment.

IPC's reputation for quality is no mere coincidence. It's the planned cornerstone of customer relations. We may err, as humans will, but we've reduced the incidence of error to an absolute minimum. Try us... or better yet arrange to visit our plant. We'll be happy to show you how IPC Quality Control benefits America's most critical manufacturers.



OIL SEALS  
PACKINGS  
PRECISION MOLDING  
Custom designed for  
your application.

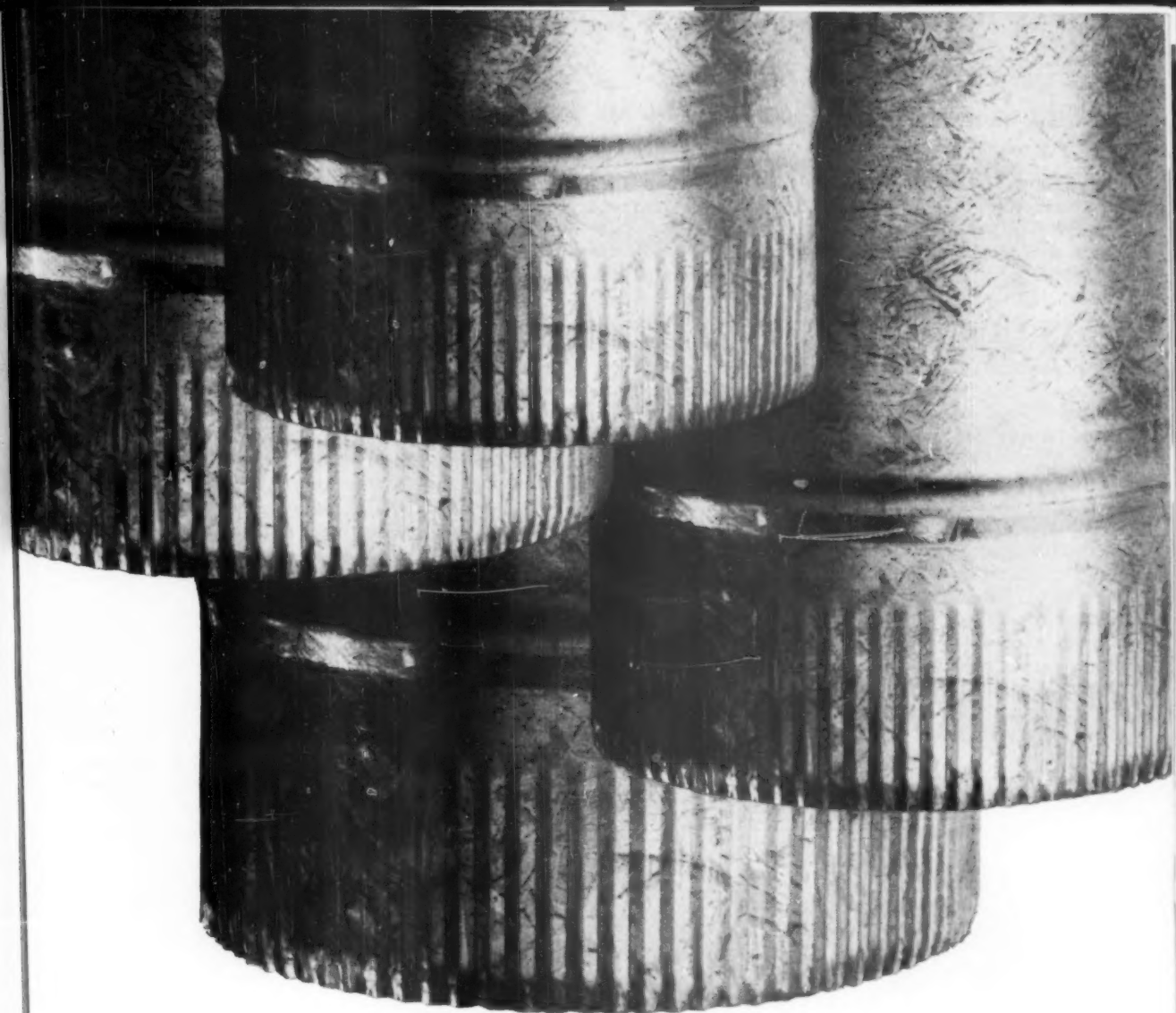
**INTERNATIONAL PACKINGS CORPORATION**

Bristol, New Hampshire

For More Information Write No. 329 on Place Mark Card—Page 32

For More Information about ad on facing page  
Write No. 330 on Place Mark Card—pg. 32—  
**PURCHASING**





The more crimping you have to do, the more satisfied you will be with Weirkote Zinc-Coated Steel. There's no peeling, no chipping, no flaking. Work it to the limits of the steel base itself and the zinc coating remains intact assuring you of the complete corrosion protection that only zinc can give. Weirkote is made that way—to retain its protective zinc coating no matter how tough the forming and bending operations. A Weirton representative will gladly supply full information on Weirkote—another fine product of the Weirton Steel Company, Weirton, West Virginia.

**WEIRTON STEEL**

*Weirton, West Virginia*



*Weirton Steel is a division of* **NATIONAL STEEL CORPORATION**

*Weirkote will also be available in 1961 from National's Midwest Steel Division, Portage, Indiana.*



## Management Techniques

(Continued from page 260)

limitations on buyers. This device expedites the handling of small orders and makes sure that the manager of purchasing or his assistant reviews unusually large orders. The principal danger in the use of this device is the infrequency with which the limits are changed. Continuing inflation by itself means that these limits should be raised from time to time. In addition, as buyers develop knowledge and skill in purchasing, their limits can and should be increased.

**Communication**—The last element that contributes to the climate or setting in which the manager of purchasing works is communication. This does not take the place of other elements, but the success of objectives, planning, organization, and control depend in large part upon what, how, when, and to whom it is communicated.

Those who have studied management may have observed that

coordination has not been mentioned. No enterprise can succeed without coordination. In short, coordination is the result of effective communication superimposed upon sound objectives, planning, organization, and control.

There must be coordination between the manager of purchasing and other line and staff managers within the enterprise, but not even the president of the company can achieve this coordination by direct order. When the manager of purchasing understands the problems of the rest of the enterprise, when the other managers understand the problems of the manager of purchasing, and when there is mutual respect, coordination will be achieved.

In solving either an immediate or a basic problem, the manager of purchasing must focus his attention on how to fulfill two responsibilities: Coordination within the company and supervision of his subordinates.

The manager of purchasing must concentrate on this question: How can I coordinate my

activities with other members of management? It is, of course, much easier for the manager of purchasing to ask another question: How can others coordinate their work with mine? The consideration of this latter question, however, is a waste of time because there is nothing that the manager of purchasing can do about it. He will discover, on the other hand, that if he coordinates his activities with those of others—and he does have some control over this—other members of management will begin to coordinate with him.

The other and equally major assignment of the manager of purchasing is to supervise his subordinates. The supervision of subordinates includes the selection of his staff and their induction to their jobs. The manager of purchasing must assign work to his subordinates and appraise their performance of this work. Finally, he must help each of his subordinates develop their abilities to the maximum required by the

(Please turn to page 270)

motors like these  
help your product  
**STAY AHEAD**  
of competition...

Lamb Electric works in so many fields—where motors that have vastly different jobs to do are sold to vastly different markets—that experience gained in one field often helps solve problems in other fields.

For example, we are able to incorporate in motors for appliances, portable electric tools, and similar products, developments that came about in research and engineering work on military and other precision motors.

This broad experience—available to all of our customers—is one way in which Lamb Electric special application motors can help your product stay ahead of competition.

Let us demonstrate the value of this experience in bringing to your customers improved products and to you more business and better profits.

# Lamb Electric

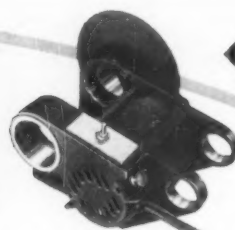
SPECIAL APPLICATION  
FRACTIONAL HORSEPOWER **MOTORS**

**THE LAMB ELECTRIC COMPANY • KENT, OHIO**

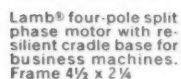
A Division of American Machine and Metals, Inc.

In Canada: Lamb Electric—Division of Sangamo Company Ltd.—Leaside, Ont.

For More Information Write No. 331 on Place Mark Card—Page 32



Lamb® three-stage gearmotor incorporates special brackets, reversing switch and connecting cord for pipe threader. Frame 4 1/4 x 2 1/4



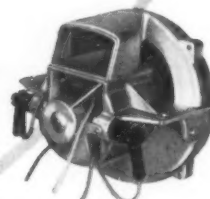
Lamb® four-pole split phase motor with resilient cradle base for business machines. Frame 4 1/2 x 2 1/4



Lamb® 110 Volt DC servo motor designed with maximum torque-to-inertia ratio for tape reel drive on computers. Frame 5 1/4 x 6



Lamb® custom-built motor and fan assembly for upright domestic vacuum cleaners



Write for your copy...  
8-page folder describes these and other Lamb Electric motors.





*Generator brushes wearing too fast?*

## Your **N**ATIONAL brush man showed this electroplater how to double brush life!



CLIFF BROWER

**PROBLEM:** Rapid brush wear was limiting generator performance.

**RECOMMENDATION:** "National" Brushes Grade BGX.

**RESULTS:** Not one commutator has been stoned or turned in five years. Brush wear has been even, with no selective action or overheating—even up to 20% overloads. Brush life has been doubled.



*Contact your "National" Brush Man*

"National", "N" and Shield Device, and "Union Carbide" are registered trade-marks for products of

### NATIONAL CARBON COMPANY

Division of Union Carbide Corporation • 270 Park Avenue, New York 17, New York  
IN CANADA: Union Carbide Canada Limited, Toronto



For More Information Write No. 332 on Place Mark Card—Page 32

JUNE 20, 1960

For More Information about ad on following page  
Write No. 333 on Place Mark Card—pg. 32→  
265



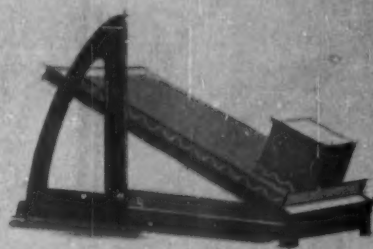
# QUALITY CONTROL FOR CORRUGATED BO



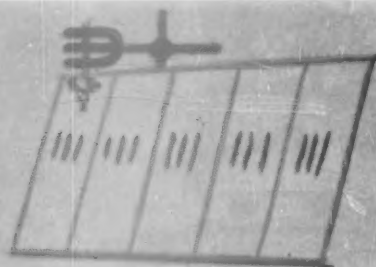
**BASIS WEIGHT TEST** measures accurate weight of linerboard.



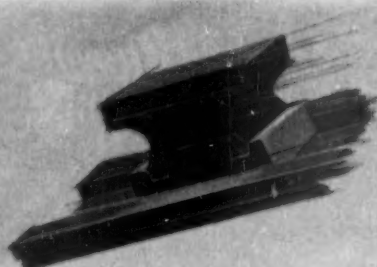
**MICROMETER TEST** measures proper caliper of linerboard.



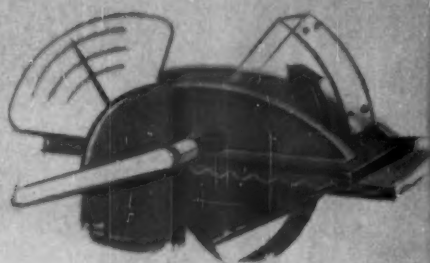
**SLIDE TEST** determines skid-resistance of linerboard.



**OIL DROP TEST** measures printability of linerboard.



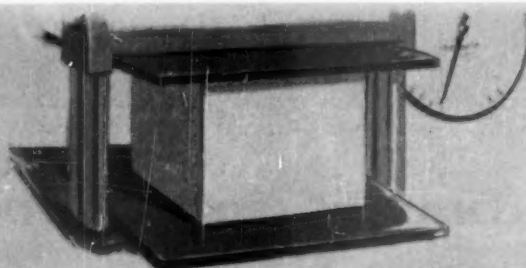
**SCUFF TEST** determines resistance of surface to scuffing.



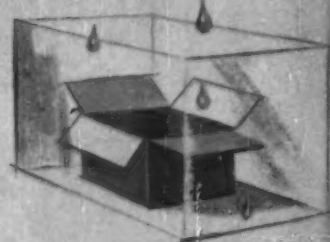
**PUNCTURE TEST** measures resistance of corrugated board to puncture.



**NAIL PULL TEST** measures the toughness of corrugated board.



**COMPRESSION TEST** measures stacking strength of finished box.



**HUMIDITY TEST** measures strength of box under high humidity.

Do you tend to think that a box is "just a box?" Actually, a St. Regis corrugated box must meet higher standards of quality and performance than you probably ever imagined. Here you see eighteen individual "torture tests" that make up our system of quality checks. It's what many a St. Regis box goes through before it's ok for you.

With this system, possible flaws are carefully hunted down, in linerboard as well as finished carton. And the box that actually protects your product in transit measures up to these quality controls, well beyond standard "book" rules.

We separately test both liners and corrugated medium in the various ways shown above; then

the final box with its contents takes a "train ride" in the laboratory. Certain tests have been developed to simulate the rough-and-tough shipping conditions that a container may have to survive. This unusual 18-step quality check is typical of the care and attention you get as part of St. Regis service.

We exercise similar controls in *designing* the box best suited for your product: its shipping, storing, stacking, handling and selling. Rely on our skilled packaging engineers for remarkable ingenuity in creating containers for you. When you need corrugated boxes of any kind, call on St. Regis. Use *our* imagination.

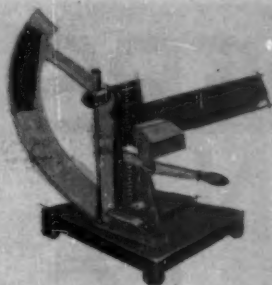
**TEAR T**  
liner has

**CONCO**  
lishes crus

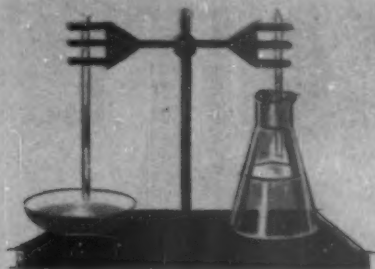
PLANT LOCAT  
Cleveland, Oh



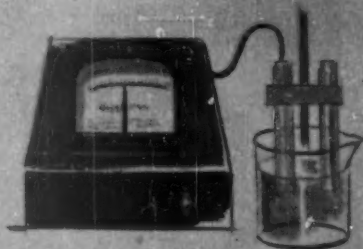
# BOXES..18 ST. REGIS® "TORTURE TESTS"



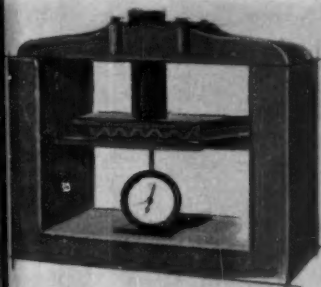
**TEAR TEST** shows how much resistance liner has to tearing.



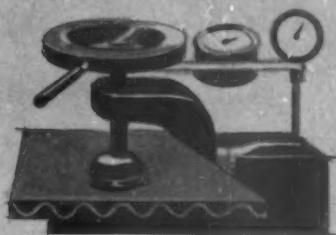
**CHLORIDE/SULPHATE TEST** measures liner's content of these chemicals.



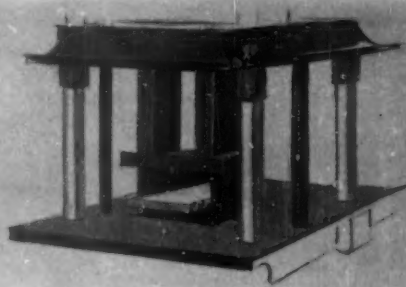
**pH TEST** shows relative acidity/alkalinity of material.



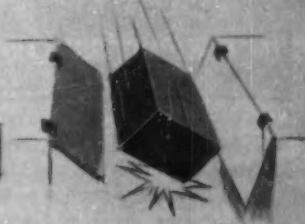
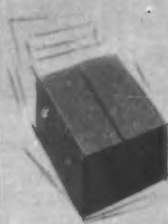
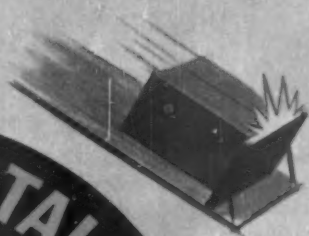
**CONCORA MEDIUM TEST** establishes crush potential of corrugated board.



**MULLEN TEST** evaluates burst-resistance of corrugated board.



**T.M.I. CRUSH TEST** measures pressure needed to flatten corrugations.



**HUMPING, SHAKER and DROP TESTS** show how much box can "take" in transit... prove its stamina under extreme handling conditions.

St. Regis

corrugated box plants are  
strategically located throughout  
the country, wherever industry is  
concentrated. Their design and  
production facilities are  
at your service.

From a nationwide family of fine St. Regis corrugated plants, you'll gain in many ways: Well-seasoned, imaginative designers serve you on both local and national levels • Consistent quality is assured from St. Regis tree to St. Regis box • New packaging materials continually emerge from a fully staffed research department • And you'll enjoy working with the friendly, experienced people who are the St. Regis Container Division!

*Anything goes... in a St. Regis container!*

CONTAINER DIVISION

**St. Regis**   
PAPER & COMPANY

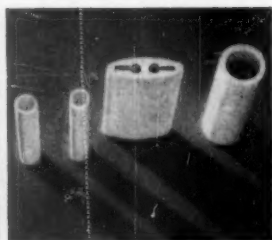
150 EAST 42nd STREET, NEW YORK 17, N.Y.

PLANT LOCATIONS: Birmingham, Ala. • Fullerton, Calif. • Salinas, Calif. • Jacksonville, Fla. • Chicago, Ill. • Dubuque, Iowa • Hagerstown, Md. • Minneapolis, Minn. • Buffalo, N.Y. • Albany, N.Y. • Canton, Ohio • Cleveland, Ohio • Coshocton, Ohio • Newark, Ohio • Crafton, Pa. • Mt. Wolf, Pa. • Pittsburgh, Pa. • Dallas, Tex. • Garland, Tex. • Houston, Tex. • Tacoma, Wash. • Grafton, W. Va. • Milwaukee, Wis.

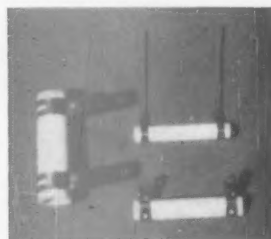




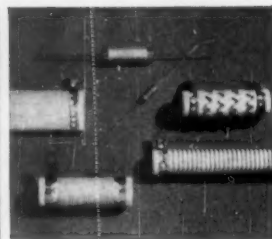
raw materials tested



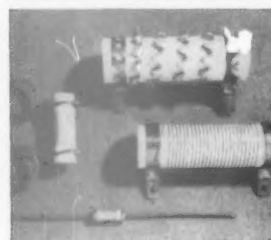
special ceramic for cores



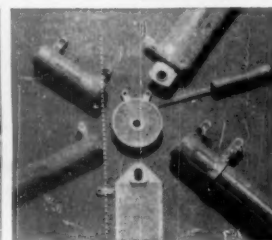
low resistance terminals



finest alloy wire



junctions spot welded or silver brazed W/L VITROHM enamel



## THIS IS A RESISTOR YOU CAN STAKE YOUR REPUTATION ON

Built-in VITROHM reliability, from core to final vitreous enamel, lets you solder these resistors in and forget 'em!

Ward Leonard VITROHM resistors come in a tremendous variety of sizes, shapes and ratings—all built for reliability.

Take the ceramic core: It's of low-porosity, high-dielectric-strength ceramic, selected for expansion characteristics compatible with resistance wire, enamel and terminals. It prevents cracking, crazing, peeling, or layer separation.

And there's the same meticulous care with all the elements of a VITROHM resistor: terminals, junctions, resistance wire, and, last but not least, the W/L formulated and manufactured VITROHM enamel.

For complete specs, write: Ward Leonard Electric Co., 50 South Street, Mount Vernon, N.Y. (In Canada: Ward Leonard of Canada Ltd., Toronto.)

9.7



**WARD LEONARD**  
ELECTRIC COMPANY • MOUNT VERNON, N. Y.

Result-Engineered  
Controls Since 1892



RESISTORS



RHEOSTATS



RELAYS



CONTROLS



DIMMERS

For More Information Write No. 334 on Place Mark Card—Page 32

"Quality Made" GER-PAK  
Polyethylene Liners

NEW!

# LINERS IN ROLLS



- stop waste motion! • handier to use!
- lower overall costs!

NOW A CHOICE: CONTINUOUS ROLLS OR SINGLE FLAT LINERS... GER-PAK comes both ways! How do you package? In steel or fibre drums, cartons, cans, pails? Regardless of type, size or shape of container, there's a competitively-priced GER-PAK liner to fit your needs.

Inert to acids, alkalis and caustics, GER-PAK seals out moisture and contamination... your products keep that "just-packed" clean look. All liners available in standard flat packing or in new "Hand-E-Roll" continuous rolls with perforated separators for quick detachment. Choice, too, of gusseted and non-gusseted as well as tie-off and peel over construction.

### LEAKPROOF DOUBLE SEAL available upon request

Tell us of your specific needs, or write on your company letterhead for descriptive literature and sample GER-PAK liner. Address Dept. PM-6.

the short way to say superior polyethylene film

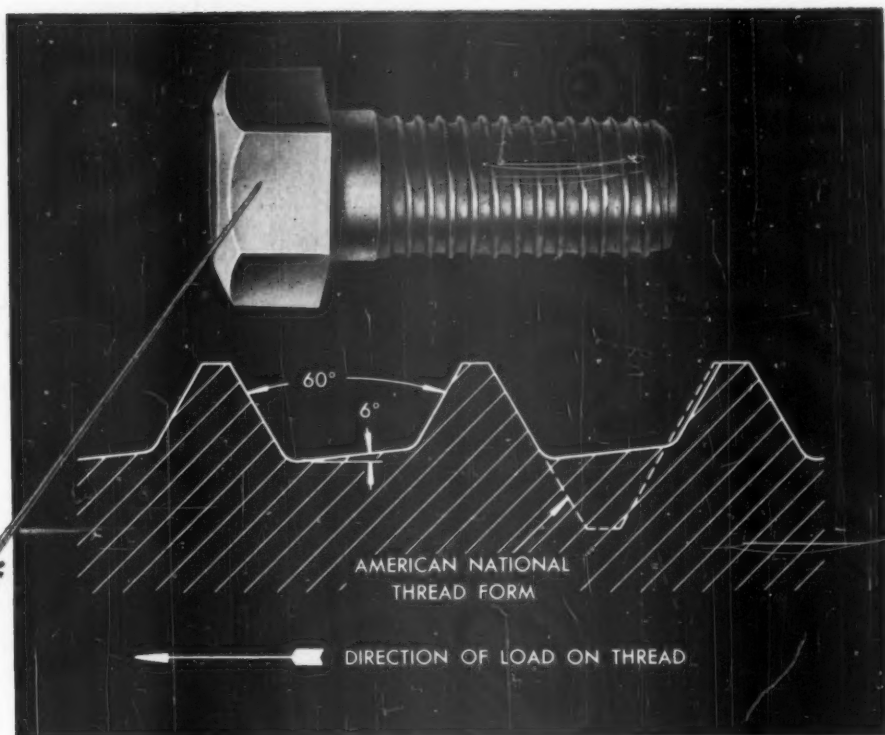
**GER-PAK®**

GERING PLASTICS  
division of STUDEBAKER-PACKARD CORP.  
Kenilworth, N. J.

For More Information Write No. 335 on Place Mark Card—Page 32



NAT'S  
quick facts  
about  
Fasteners...



## Can **any** fastener actually **become tighter** in service?

WELL, HARDLY. NOT JUST ANY FASTENER...

But self-locking, extra-strength LOK-THRED® bolts, studs and screws *do*, and even after long service you can expect their breakaway removal torque to average about 70% higher than at installation.

Here's the reason. Just take a look at the LOK-THRED profile. Notice the extra-wide root? And its converging angle? It's held, strictly by design, to exactly 6 degrees.

Now, see what happens, as you drive any LOK-THRED fastener. It re-forms the metal of the receiving thread, squeezing out every void, and forming an intimate metal-to-metal contact. And each of the angled roots becomes a 6-degree tapered wedge, with the loading constantly pulling against it to make its anchorage even firmer.

That's why LOK-THRED fasteners actually *do* become tighter in service. They're self-sealing, too... fluids can't leak past them. And yet they're fully reusable... require no selective fits... can be used with ordinary tools.

Take our word for it, there are plenty of reasons\* why LOK-THRED is superior for many kinds of fastening... and we'll be glad to help you develop any applications to your own products.

\*They're all given in National's LOK-THRED booklet, with plenty of supporting data. Write for your copy.



The National Screw & Mfg. Company • Cleveland 4, Ohio

California Division, The National Screw & Mfg. Company • 3423 South Garfield Avenue, Los Angeles 22, California

For More Information Write No. 336 on Place Mark Card—Page 32



# ALLEN

The cost of ALLEN Hex-Socket Cap Screws is only a minor fraction of your assembly costs . . . be sure you're getting the timesaving, cost-saving advantages of genuine Allens!

Ever since Allen first produced the hex socket head screw nearly fifty years ago, specifying *genuine Allens* (made by Allen of Hartford) has been a sure way to guarantee dependable threaded fastening.

Only *genuine Allens* have Leader Points that make starting easier, and greatly minimize danger of cross threading. *Genuine Allens* are "pressur-formed" to preserve the long fibers uncut throughout the length of the screw, giving stronger sockets for greater tightening torque.

Write for samples and engineering data. See how *genuine Allens* will make your product better.



Allen's new 1960 Series Socket Head Cap Screws give up to 2½ times more load carrying capacity, without indentation.



Head diameter of sizes from ¼" up is now uniformly 1½ times the body diameter—providing more under-the-head bearing surface, and a proportionate increase in clamping force. Write for new Bulletin G-25, with full specifications.

Stocked and sold by leading Industrial Distributors everywhere



## ALLEN MANUFACTURING COMPANY

HARTFORD 1, CONNECTICUT, U.S.A.

For More Information Write No. 337 on Place Mark Card—Page 37

## Management Techniques

(Continued from page 264)

work of the purchasing department and the enterprise as a whole. At least one, if not more, of the subordinates should develop to the extent that he is qualified to be the next manager of purchasing when the incumbent is advanced to even greater management responsibility, or when he retires.

The manager of purchasing, as well as others in management, must fulfill his responsibilities for coordination with his associates and for supervision of his subordinates.

The next decade will give each of you many opportunities to apply the basic management techniques of problem-solving and communication. The results you secure will be affected in part by the sum of your intelligence, knowledge, and skill. These will be multiplied by your application of what you know and will learn about management techniques.

—By Robert D. Gray, Director, Industrial Relations Section, California Inst. of Technology.

## Materials Management

(Continued from page 101)

New Average =  $177 + .1 (197 - 177) = 179$  units. If the demand next week turned out to be 169 units, our following week's forecast would then be:

New Average =  $179 + .1 (169 - 179) = 178$  units

Notice that although the demand fluctuates, the smoothed average will "track" it down the center. The value of the smoothing constant A determines the extent to which the fluctuations are smoothed. Our new average is a weighted average of current demand and the past demand as reflected by the old average. A very high value of A would place more weight on current demand and then the path of the averages would correspond more to the fluctuation of the actual demand itself.

Since the value of constant A determines the effect of past demand on the average, a small

(Please turn to page 274)



**ACCO**  
for Better  
Values

# R-P&C VALVES

THE COMPLETE LINE  
—DESIGNED FOR DEPENDABILITY



## Created by R-P&C—made and sold exclusively by R-P&C...Electric Furnace Iron Valves

Electric furnace iron—introduced exclusively in R-P&C Valves—provides a high quality cast iron that meets the exacting requirements for pressure castings. Melted and refined under closest metallurgical supervision, R-P&C Electric Iron has physical properties *far exceeding the minimum standards* to which they must conform. It has a balanced chemical composition and a tough, dense body structure; and, it is more resistant to corrosion. All cast iron parts of R-P&C Valves are made of this Electric Furnace Iron.

Shown above is **Fig. 625**, a general service valve which is particularly applicable where full, unobstructed flow is desired. This type, available in bronze-trimmed or all-iron style,

either flanged or screwed, is made in fifteen sizes, from 2" to 24"—and is typical of the better values offered by the entire line of R-P&C Electric Iron Valves.

### The R-P&C Line is Complete

The R-P&C line embraces gate, globe, angle and check valves in bronze, electric furnace iron and cast steel, and forged steel; all in a wide range of sizes, styles and pressure classes. Also, R-P&C offers specialties such as Lubrotite gate valves, bar stock valves, asbestos-packed cocks, cast steel fittings and pressure-seal cast steel valves. Order through your nearby R-P&C Distributor. For complete catalog, write our Reading office.



### FREE WALL CHART "How to Protect Your Valves"

Installation pointers, operating tips, clues to longer valve life. They are all on this 22" x 17" wall chart. Write for your free copy.

### R-P&C VALVE DIVISION AMERICAN CHAIN & CABLE

Reading, Pa., Atlanta, Boston, Chicago, Denver, Detroit, Houston, New York, Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.







## *When a man walks through your doorway...*

When the V-R man calls upon you, he calls in a spirit of friendliness and helpfulness. He is in a position to serve you ably. Perhaps at the moment you have no major problems in supplying your plant with cutting tool materials. Regardless, you undoubtedly are interested in additional ideas that will bring about increased efficiency, improved

productivity, greater operating profits. Your V-R representative can do these things for you. We ask that you "put him on the team." Armed with cemented carbide, Tantung cast alloy and ceramic cutting tools—as well as toolholders — he can make recommendations that are exactly right for each job.



A-791

CREATING THE METALS THAT SHAPE THE FUTURE

**VASCOLOY-RAMET**

876 MARKET STREET • WAUKEGAN, ILLINOIS



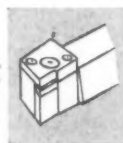
CARBIDE —  
BLANKS,  
INSERTS,  
BRAZED  
TOOLS



CERAMIC  
INSERTS —  
TRIANGULAR,  
SQUARE,  
ROUND



TANTUNG —  
SOLID TOOL BITS,  
CUT-OFF BLADES,  
TIPPED TOOLS,  
CAST-TO-FORM



TOOLHOLDERS —  
SOLID BASE  
AND  
ELEVATOR  
TYPE



FACE MILL  
CUTTERS  
WITH  
THROW-AWAY  
INSERTS



ALL NEW ... AND

Shock  
Resistant!



## Hoover pillow blocks with ductile cast housings

Hoover introduces a new, economical pillow block ball bearing unit with cast housing of ductile material that absorbs shock and vibration, assuring long bearing life. It is designed to carry light loads at normal speeds.

The unit contains a pre-lubricated bearing featuring ultra-smooth *Hoover Honed* raceways and a perfectly matched set of *Micro-Velvet* balls, a guarantee of unexcelled quality. Known as the E D series, these new pillow block bearings are available in shaft sizes from  $\frac{1}{2}$ " to  $1\frac{3}{16}$ ".

Hoover also offers a cast iron pillow block bearing for light to medium load conditions, plus a wide range of flange and machine units.

**Hoover**  
BALL AND BEARING COMPANY

5400 South State Road, Ann Arbor, Michigan

Zone Sales 8581 South Chicago, Chicago 17, Illinois  
Offices and 290 Lodi Street, Hackensack, New Jersey  
Warehouses 2020 South Figueroa, Los Angeles 7, California

*Hoover Honed* and *Micro-Velvet* are Hoover trademarks.



**NEW BULLETIN 106**  
DESCRIBES COMPLETE LINE  
OF NEW HOOVER PILLOW  
BLOCK BALL BEARINGS!

Please return coupon for your copy

Hoover Ball and Bearing Company		PM-6
5400 South State Road, Ann Arbor, Michigan		
Please send new Bulletin 106, which describes Hoover pillow block ball bearings.		
Name _____		
Title _____		
Company _____		
Address _____		
City _____	Zone _____	State _____



## Materials Management

(Continued from page 270)

constant is equivalent to a long moving-average. For example, a constant of .1 gives results very close to what would have been obtained with a nineteen-period moving-average! In contrast, a constant of .5 is close to a three-period moving-average in its results. The best constant to use can be obtained by trial and error or through statistical techniques. One seeks a smoothing constant which will yield the least spread of forecast errors around the forecast. A study of forecast error distributions using various smoothing constants and historical data would be valuable in setting the constants properly.

To correct for lag due to trend we must first measure the trend. The trend is the change up or down taking place in the averages themselves. The trend this period is:

Current trend = New average — Old average.

We can use exponential smooth-

ing to estimate the average trend just as was done for the demand itself.

New trend = A (current trend) + (1-A) old trend.

Then the expected demand in the next period is found by using the relation:

Expected Demand = New Average + (1-A) new trend.

A

The factor in the parentheses tells us how much to correct the new average with the estimate of trend. We can illustrate with a continuation of our first example.

Let us assume that the smoothed averages have been moving upward an average of 3 units per period, as previously forecasted by exponential smoothing. This is our old trend. In the current period the trend is 2 units (179 - 177). To calculate the new trend we have:

New trend = .1 (3) + .9 (2) = 2.1 units.

The expected demand for the next period would be:

Expected demand = 179 +

(1 - .1) (2.1) = 198 units.

.1

If we want to use the forecast of demand to establish an order point, there are two more steps to take. First, we have to project the demand through the lead time. If the forecast for the following week is 198 units, and the lead time is three weeks, one could forecast a total demand during the lead time of 594 units. If there has been any trend, one might wish to take it into account in making the lead-time forecast. To do this we add to our previous figure of 594 units, the following:

Lead Time (Lead time + 1)

$$\frac{2}{2} \text{ (New trend) } = \frac{(3) (4) (2.1)}{2} =$$

12.6 units,

Lead Time Expected Demand = 594 + 12.6 = 607 units

The second step to take is to adjust the estimate to the uncertainties of demand and delivery. One could arbitrarily add

(Please turn to page 276)

Now... from

**UNITECH** Products, Inc.

**Precision Quality Bearing Balls**

**HIGH CARBON CHROME**

**STAINLESS STEEL**

... in quantity from  
**New York warehouse stock**

WRITE, WIRE, PHONE TODAY...

**UNITECH** Products, Inc.

Worth 4-3365

50 CHURCH STREET

NEW YORK 7, N. Y.



National Distributors for  
**KUGELFISCHER GEORG SCHAFFER & CO.**



For More Information Write No. 341 on Place Mark Card—Page 32

**Let NAGEL-CHASE**  
**Supply Your V-Belt Pulleys!**



- Single Groove, FHP
- Strong, Welded, Pressed Steel Design
- Light Weight
- Wide Range of Standard Sizes
- 2.4" to 12" PD for "A" and "B" Section V-Belts
- 1/2" to 1" Bore

Original equipment manufacturers whose products incorporate V-Belt Pulleys can make substantial production savings by obtaining them from Nagel-Chase. Specialists in the production of fractional HP pulleys, Nagel-Chase has the tools and production facilities for a wide variety of standard sizes. With this elimination of tool costs and the release of production facilities for other components, manufacturers find the use of Nagel-Chase pulleys cuts production costs.

Write for complete details and specifications

**The NAGEL-CHASE MFG. CO.**  
2821 No. Ashland Ave., Chicago, Ill.

For More Information Write No. 342 on Place Mark Card—Page 32

For More Information about ad on facing page  
Write No. 343 on Place Mark Card—pg. 32→

**PURCHASING**



# Numatic Towels...

**This handle cuts out  
washroom complaints...**

**while it's cutting costs**

"Numatic really cuts down on washroom waste. The hand crank prevents thoughtless grabbing of unnecessary towels and helps to lower maintenance costs."



- "Numatic is soft and white ... but strong, too! It doesn't shred or leave lint on my clothes. And I like the way it lets me crank out as little or as much toweling as I actually need."

- A detailed analysis of your washroom costs will show you how much money Numatic can save you. For samples and complete information, call your nearby Crown Zellerbach distributor, or write us at 485 Lexington Avenue, New York. Numatic®

- "Numatic lets me do more work, because I don't need to refill the dispenser as often. Each roll has an average of 667 towels! That's big capacity!"



**CROWN ZELLERBACH**

**DISTRIBUTOR SALES DIVISION**

In Canada address inquiries to Crown Zellerbach Canada, Ltd., Vancouver, B.C.



## Materials Management

(Continued from page 274)

a flat percentage, say 30% for safety. A more exact procedure would be to analyze the distribution of forecast errors. If, over a long period, the maximum encountered forecast error (actual demand—forecast demand) in a lead time is 150 units, then we could adjust our lead time forecast upward, from 607 to 757 units. This adjusted value is a forecast of lead time demand such that the actual demand will, for all practical purposes, seldom if ever exceed this value. This is an order point set for maximum service. There is a very simple procedure for scaling down this safety stock to give a prescribed level of service less than 100%. It involves following the average forecast error with exponential smoothing, and we shall not cover it here. Details of this and methods of handling seasonal factors are available in R. G. Brown's book.

—By Mr. R. B. Orenstein, International Business Machines Corp.

## Purchasing Automation

(Continued from page 80)

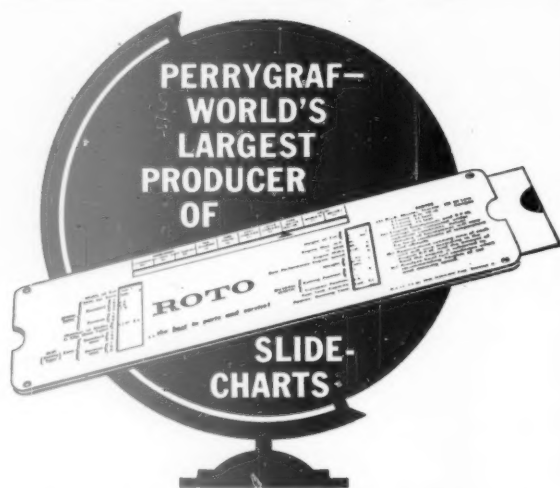
equipment could perhaps do for you. One of the most discouraging things we learned from our survey of the use of tabulating equipment by purchasing departments was the fact that so few people were using it at all—even when the needed equipment was already available within their company.

In most concerns, existing tab equipment is most likely located in the accounting department which may be far from enthusiastic about having someone break in on their equipment right in the middle of monthly closings. But by a little planning with them you should find you can phase your work in such a way as to avoid their peak load. You will usually be amazed at how much of your work they can handle with no additional basic equipment and little or no increase in personnel. You may also be surprised at how happy they are to let you share some of their overhead.

A punched card can show the supplier, order number, date, quantity, unit of measure, material, description, requisitioning section, buyer, expeditor, required date, promised date, price and so on. Usually some of these have to be coded to conserve space and thereby admit more information. From a deck of such cards you can tabulate the information you want by supplier, by commodity, by due date, by descending value, by buyer, by expeditor, by any combination of these or in any manner you can imagine.

Thus far we have talked only about automation within the purchasing department for its own use. But as we begin using E.A.M. equipment, some opportunity for integrated data processing presents itself. Once data is in machine language in the form of punched cards it can be used by other departments.

The accounting department, for example, can get a check of actual price paid versus standard cost and material cost to date (Please turn to page 280)



Two hundred million since 1932! More Slide-Charts for more people than any other company in the world.

Two Modern Plants, one geared to runs of millions, the other to hundreds. Finest facilities for accurate printing and assembly. Deliveries as high (in a pinch) as a million per week. Prices consistent with quality work and dependent on quantity and materials from pennies to dollars.

We invite your inquiry. Send for free full color booklet including 122 actual case histories.

### PERRYGRAF CORPORATION

1500-I Madison Street, Maywood, Illinois 150-I South Barrington Avenue, Los Angeles 49, Calif. Sales Offices in Principal Cities  
For More Information Write No. 344 on Place Mark Card—Page 32

# FREE

to metalworking management!

# NEW

16-page illustrated booklet

## Vapor-from-paper STOPS RUST

Now, you can "mothball" your metal parts or products as easily as your wife protects her woollens. This new booklet tells how Ludlow VPI® Wrap cuts costs in shipping and storage. Read how other companies have saved by modernizing their preservation methods. It's FREE! Ludlow Papers, Needham Heights, Mass. Dept. 166.



For More Information Write No. 345 on Place Mark Card—Page 32





## ***Sees \$4500 annual screw saving***



**RB&W fastener survey uncovers use of special item which is replaceable by standard hex screw at much less cost**

Of course you pay more for a "special" than a "standard" item—and that includes fasteners. So, when surveying a company's usage of fasteners, the RB&W Man looks sharply for the "specials"—and a valid reason for their use.

He could find no good purpose for the extensive use of screws with heavy head and milled body in one particular product. There was neither a specification requiring close fit in very close tolerance holes . . . nor were there exceptionally "sloppy" holes that called for an oversize head to span.

He therefore recommended assembly with standard RB&W High Strength Hex Screws. They would meet any physical requirement for the "special" being used... *but cost 30¢ less per unit. Yearly total: \$4500 more for profits instead of costs.*

Are you sure you're not needlessly wasting dollars on fastener specifications? Let the RB&W fastener expert survey them. He's made proper fastener usage a science, is ready to cooperate with your engineers. Contact Russell, Burdsall & Ward Bolt and Nut Company, Port Chester, N. Y.



Plants at: Port Chester, N. Y.; Coraopolis, Pa.; Rock Falls, Ill.; Los Angeles, Calif. Additional sales offices at: Ardmore (Phila.), Pa.; Pittsburgh; Detroit; Chicago; Dallas; San Francisco. Sales agents at: Cleveland, Milwaukee; New Orleans; Denver, Fargo. Distributors from coast to coast.



# WELCOME TO 580

...where for  
110 Years  
customers  
have found  
**Everything**  
*"Ship Shape  
and  
Bristol Fashion"*



One of the first things you'll notice as you enter is that you're "not left cooling your heels." Instead you see your man immediately, be he president, purchasing agent or sales manager. All responsible men, experienced in mill and sales procedure who have the authority and ability to give you *Performance as Promised* . . . in quality, uniformity, tolerance and delivery . . . on every pound of Bristol Brass strip, rod and wire.

The Bristol Brass Corporation, 580 Broad Street, Bristol, Connecticut. Since 1850, makers of Brass strip, rod and wire. Bristol Brass has offices or warehouses in Boston, Buffalo, Chicago, Cleveland, Dayton, Detroit, Milwaukee, New York, Philadelphia, Pittsburgh, Rochester, Syracuse, and for brass forgings, too . . . Accurate Brass Corp. (subsidiary of The Bristol Brass Corp.), Bristol, Connecticut.

**"BRISTOL FASHION" MEANS BRASS AT ITS BEST**

For More Information Write No. 347 on Place Mark Card—Page 32





in impacts...

## Alcoa puts the metal where you want it

How BIG an impact have you seen lately? Alcoa can now make them up to 12 in. in diameter and 60 in. long.

When Alcoa's new 2,500-ton press hits an aluminum alloy slug, a giant impact is formed with the combined strength of an extrusion and forging.

Like their small brothers, these big new impacts can save you money. They are produced in one fast operation. There's no parting line to be ground. No scale to be removed. No draft to be cut off. Impacts have forged bases and extruded sections. Multiple parts can often be combined into one integral impact eliminating welded or mechanical joints. Machining is reduced, and excessive material waste is eliminated.

You can get these big new Alcoa® Impacts in many alloys with tensile strengths up to 75,000 psi. Also made from aluminum powder metallurgy alloys which provide excellent properties at elevated temperatures.

Alcoa Impacts are unfailingly sound. They have smooth, corrosion-resistant surfaces. You can have them in plain or complex shapes with design features combining those of forgings and extru-

sions—flanges, steps, multiple walls, bosses, ribs.

In impacts, as well as forgings, castings, extrusions and screw machine parts . . . Alcoa puts the metal where you want it. A call to Alcoa can mean ingenious design solutions. Start now; write for *Metal in Motion*, Alcoa's new 34-page brochure on impacts. Aluminum Company of America, 906-F Alcoa Building, Pittsburgh 19, Pa.



Alcoa puts the metal where you want it . . . in impacts, castings, forgings, extrusions and screw machine parts.



# useful information on castings

## DESIGN • PURCHASING • MACHINING

If you want more information about iron castings it's yours for the asking. Just check as many of these bulletins as you would like, clip this ad and mail it to us.

- ☐ Casting Design as Influenced by Foundry Practice
- ☐ Summary of Specifications for Gray and Nodular Cast Irons
- ☐ Hamilton Quality Ductile Iron
- ☐ Engineering and Purchasing Requirements for Gray Iron Castings
- ☐ Engineered Castings from Hamilton Foundry
- ☐ Handbook of Meehanite Metals
- ☐ Machining and Abrasive Finishing Gray and Nodular Iron
- ☐ Glossary of Terms—For Producers, Users of Iron Castings

Iron Castings have tremendous design flexibility—but there are certain danger points to be avoided. In addition, there is an engineered iron best suited to your combination of design and use requirements. You can get competent advice at any time from Hamilton Foundry engineers on these questions—and any other castings problem on your boards.

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

GRAY IRON • ALLOYED IRON • MEEHANITE® • DUCTILE (NODULAR) IRON • NI-RESIST • DUCTILE NI-RESIST • NI-HARD



# HAMILTON FOUNDRY INC.

1551 LINCOLN AVENUE • HAMILTON, OHIO • TWInbrook 5-7491

For More Information Write No. 349 on Place Mark Card—Page 32

## Purchasing Automation

(Continued from page 276)

against a given job. There could be general interest in reports such as disbursements, commitments, price index movements, and the like.

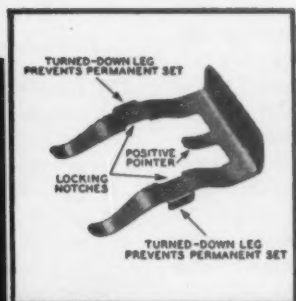
A card gang punched from the original can serve the receiving department as a master from which receiving reports, in the form of a punched card, can be prepared to feed to inspection, the requisitioner, to purchasing to close the order and relieve commitment, and to accounts payable. There it can be automatically matched with a copy of the original card from purchasing. With proper planning some of these cards can do double duty. For example, purchasing and accounts payable might be able to use the same original card and the same receiver. No discussion of office automation would be complete without mention of electronic computers. There are some things that people planning to use computers should look out for if they are to avoid some common errors.

- 1) There is a temptation to do everything differently just because you can with this new equipment. This can be as bad as making no changes. You are trying two or more new things at once and not only can you get in trouble but you are never quite sure what caused it.
- 2) There is a tendency to put virtually everything on the computer just because time is available. As a result some programs end up on the computer which could be better and more economically performed by some other means.
- 3) There is a widespread belief that computers are inherently mathematical by nature and should be run only by mathematicians. This is true only where difficult technical and mathematical problems exist. Math experts don't usually know very much about running a sales department, a production department or a purchasing department.

(Please turn to page 282)



Like  
no other  
fastening  
device...



## THIS EXCLUSIVE CORBIN CLIP

**saves time!  
cuts costs!  
never loosens!**

Made of tempered spring steel. Locks and snaps into place with an assuring click. An exclusive and patented design—different from any other—holds clip securely in place: notches on clip engage notches on cylinder... specially-designed legs on sides of clip absolutely prevent a permanent set.

No time-consuming, fumbling assembly operations. No special installation skills. Just a snap and the job's done—on 14, 16, 18, 20 and 22 gauge metal. Can be furnished for other gauge metal on special order. For complete details, write CORBIN.

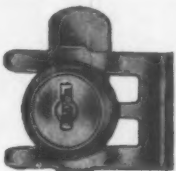
Spring steel: clip locks into fastening grooves.



Side view—clip holds lock firmly against metal.



Top view—clip cannot take a permanent set.



Clip in place on Corbin C19258 disc tumbler cam lock. Also available on other cylinder locks.



**CORBIN CABINET LOCK DIVISION**  
THE AMERICAN HARDWARE CORPORATION  
NEW BRITAIN CONNECTICUT

For More Information Write No. 350 on Place Mark Card—Page 32  
JUNE 20, 1960

## for Custom Plastics Extrusions

consult

**YARDLEY**



### TUBING

Special shapes or standard, rigid or flexible, in diameters from 1/2" to 16". Our engineers have developed advanced techniques that can save time and money on the right shape for your specific needs.

### SPECIAL SHAPES

We extrude any shape in a variety of formulations to meet a wide range of design and performance requirements. Our complete tool and die shop is staffed with skilled technicians. We maintain a library of more than 400 section dies, one of which may fit your product design.



### FABRICATED PARTS

We shape, flatten, curve, swedge, drill and perform other fabricating operations to make plastic parts ready for your production lines. Close tolerance, absolute uniformity, dimensional stability and high-gloss finish are standard production requirements at Yardley.



Write for Bulletin 180 — and for  
prompt quotation send us your prints



**YARDLEY PLASTICS CO.**

140-144 PARSONS AVE., COLUMBUS 15, OHIO

For More Information Write No. 351 on Place Mark Card—Page 32



## Purchasing Automation

(Continued from page 280)

So use your own people where possible and call in the math expert only when you run into a math problem.

Here are a few examples of the sort of things a purchasing agent or materials manager can contribute to an integrated data processing program. It is possible, for instance, for a computer to keep track of the receipts and issues against a stores account and, just as in the use of tabulating equipment, to properly apply the accounting charges.

But, with this record of activity available, why not tell the computer how much it costs to place an order, how much it costs to carry stocks, what the lead time is for each item, what availability factor you require and so on, and with a knowledge of the laws of probability or an assist from that math expert or a statistician, program the computer so

it will decide when and how much to order and when to ask for delivery. Let it write a requisition; or better yet, let it actually write the order. When you set up your permanent requisition system you provided everything necessary to do this and you can get automatic output to integrate your operations with the receiving department and others.

If you write orders on a computer you accumulate a wealth of price history. The computer can quickly translate this into a price index for your use. It is quite possible to go a step further and with these trends and your knowledge of markets and what affects them, tell the computer how to forecast future price trends. Such information will be extremely valuable to management.

Do you need automation? Can there honestly be any doubt? Of course you do.

—By William Meyer, Purchasing Agent, Westinghouse Electric Corp.

## Freight Claims

(Continued from page 98)

- (5) **Loss or damage by reason of delay**—In loss or damage by delay claims, the transit time provided is compared with the normal movement of goods over the same route, and if it is excessive, the carrier must determine whether or not the delay was beyond its control. If a carrier can be proven negligent, claim can be filed for reimbursement of the damages suffered.

In preparing a claim against a negligent carrier, the claimant is entitled to indemnification for full actual loss or damage. The claim file to be presented to the negligent carrier should include a standard form for presentation of loss and damage claims, certified copies of original invoices, carrier inspection report, original paid freight bill and bill of lading.

—By Frank Wean, Purchasing Agent, International Paper Co.




choose your carrier as  
carefully as you choose your supplier



**SPECIFY**

**ROADWAY**

for data on safe, dependable Roadway service,  
call the Roadway terminal in your area  
or write:

**ROADWAY EXPRESS, INC.**  
147 Park Street • Akron, Ohio

For More Information Write No. 352 on Place Mark Card—Page 32

For More Information about ad on facing page  
Write No. 353 on Place Mark Card—pg. 32→





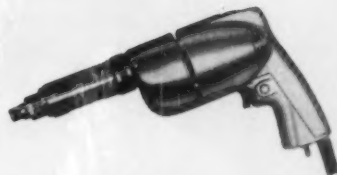
# Exact Tension—500 screws or 500,000!

New Skil Anti-Ratcheting Driver rules out rejects

Set the torque on this driver for *any* assembly job and it'll stop driving completely the instant exact tension is reached.

A half million drives later you still get exact tension every time—never a stripped thread or damaged part, never a chance of costly rejects. And since torque control is not dependent on operator's skill, even beginners get the same fast, uniform results as experienced workers.

Drivers simply don't come any faster, any quieter, any better! Your Skil distributor has the proof. Ask him for a demonstration of either Model 235 (standard) or 272 (reversing). He's listed in the Yellow Pages under "Tools-Electric". Or write: Skil Corporation, Dept. 125F, 5033 Elston Avenue, Chicago 30, Illinois. In Canada: 3601 Dundas Street West, Toronto 9, Ontario.



Both models handle wide range of screw-driving and nut running jobs. Reversing model also does fast disassembly work.

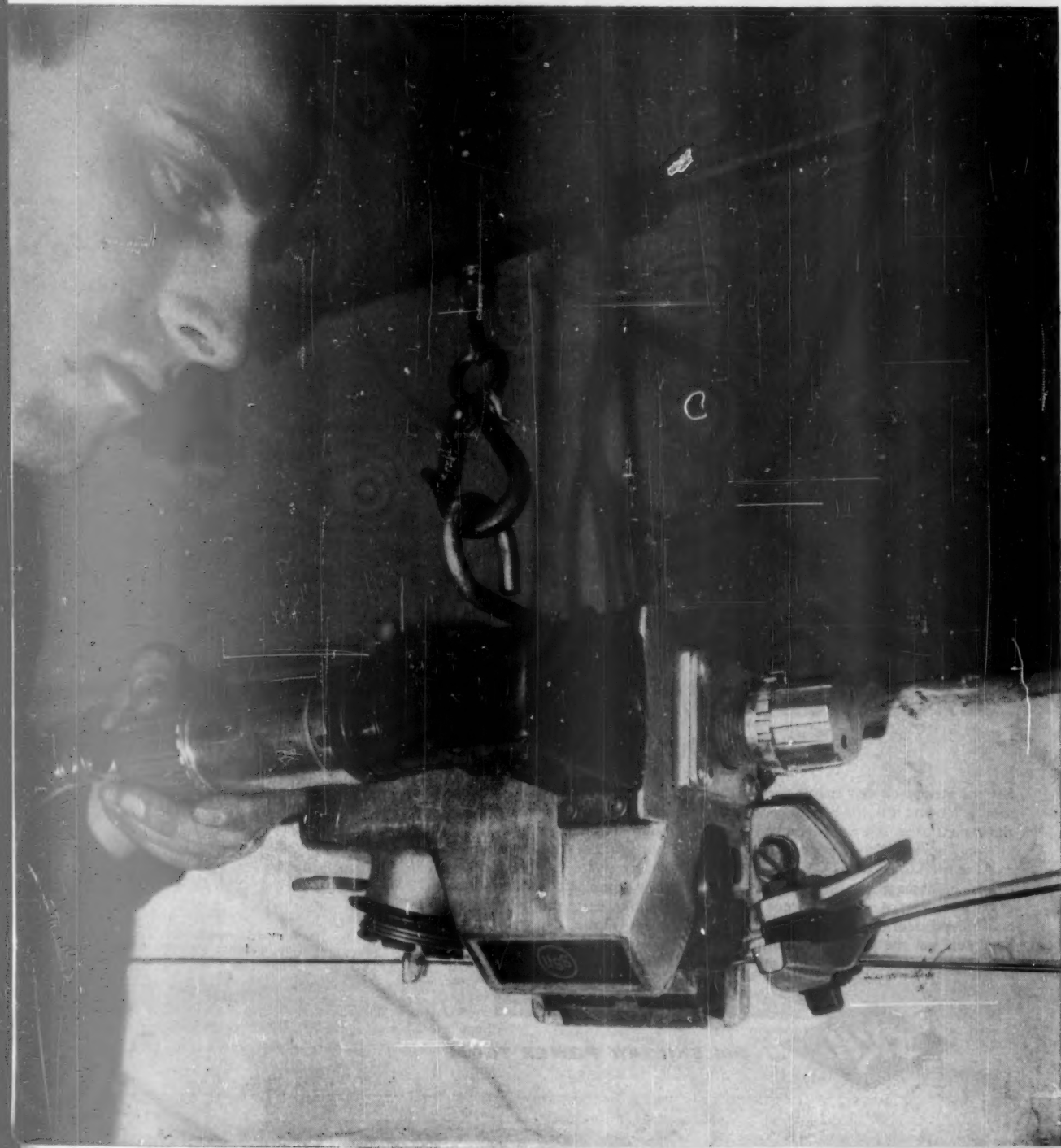


... and SKILSAW POWER TOOLS



# Round Steel Strapping Machine

"Our operator can tie two bales with USS Round Steel Strapping in the same time it took him to band one bale with flat steel strapping," says Mr. Richard M. Johnson, Waldorf Paper Products Company, St. Paul, Minnesota. "The extra speed comes from our new Model 13 Round Steel Strapping Machine. It automatically applies tension, and then automatically fastens the strapping—the operator makes only one motion instead of three. You see, flat steel strapping required manual tightening, placing the seal and crimping






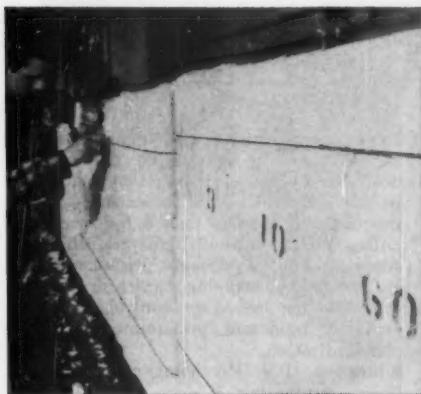
# speeds up bailing process 100%

it. But, our Model 13 permits the operator to do these steps without taking his hands off the machine."

The new Semi-Automatic Model 13 can be rented for only \$125.00 a year. Write to our General Office as shown below, or contact our Strapping Service Center nearest you for information on how this fine new machine can help speed up your shipping operations.

*USS is a registered trademark*

More reasons why the swing is to  Complete Strapping Service



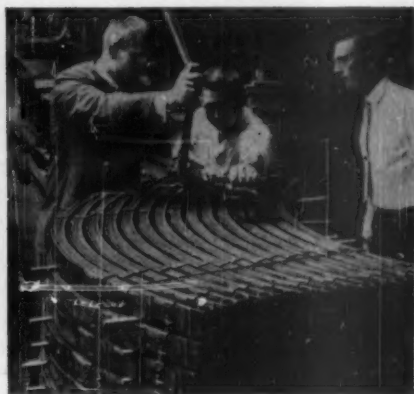
## Round Steel Strapping saves \$14,000 annually

Mr. Johnson also had this to say about USS Round Steel Strapping: "This yearly savings represents only the difference in material costs—compared to  $\frac{1}{8}$ -inch flat steel strapping. It's not only cheaper in terms of cost-per-foot, but we've discovered that it has less tendency to cut into the corners of the pulp bales. We're using Round Steel Strapping on bales of bleached pulp weighing 880 to 1100 pounds each. We order it in precut lengths. These 13-gauge lengths are placed in a tray alongside the baler and taken out one at a time—as they're needed. Because the cost-per-foot is so much lower, each bale costs us less than half the price of flat steel strapping."



## New Model 16 Air-powered Round Steel Strapping Machine

This new semi-automatic machine is perfect for strapping large and bulky cartons, crates and bundles of all kinds. The Model 16 weighs about 14 pounds and uses from 15 to 19% gauge Coppered Galvanized Round Steel Strapping. The Model 16 rents for \$110.00 a year. The Model 13 weighs about 20 pounds, and uses USS Round Steel Strapping from 12 to 15 gauge in galvanized Hi-ten and Super Hi-ten in coils or straightened and cut-to-length. This portable machine may be rented for \$125.00 a year, or purchased for \$625.00. Get additional information from our General Office (address below) or contact our Strapping Service Center nearest you.



## Strapping Specialist helps cut handling costs \$20,000 a year

"We've saved this amount, which is about 30% of our over-all shipping costs, by changing from flat steel strapping to 10-gauge USS Round Steel Strapping. We're using it to bundle automobile springs for railway cars," says Mr. Donald Elliot, Plant Manager, The Mather Spring Company, Toledo, Ohio. "This savings is due to 50% lower strapping costs, more efficient bundling methods as devised by U. S. Steel Supply's Technical Specialist, improved carloading procedures, and the elimination of extra unloading charges." One of our Strapping Specialists may be able to help you eliminate wasteful and costly bundling methods. Contact him soon. His advice is free.



**U. S. Steel Supply  
Division of  
United States Steel**

Steel Service Centers and Complete Steel Strapping Service Coast to Coast  
General Office: 208 South LaSalle Street, Chicago 4, Illinois



# Employment Service

## CONTRACT SPECIALIST

A need exists at Wright-Patterson air force base, near Dayton, Ohio, for contract specialists. Salaries up to \$8330.00 per year. Liberal annual and sick leave policy. Excellent fringe benefits. Experience required in purchasing by contract of diversified technical items, in large volume, demonstrating the knowledge of commercial or government contracting procedure. Secure an application form SF 57 from any first or second class post office and, after completion, forward it to headquarters, air materiel command, attn: Mcgcea-Recruitment, Wright-Patterson Air Force Base, Ohio.

**Experience:** Three yrs. as purch. dept. expediter in large gov't. arsenal. Five yrs. as ass't. purch agent for ice cream products mfr. with nation-wide distribution, purchasing for administration, production and marketing of products, including office equipment & supplies, plant machinery & supplies, raw materials, printing, premiums and other point of sale advertising media.  
**Education:** B.S. in bus. adm.  
**Will relocate.**  
**Write:** Box 187

**Experience:** Centralized purchasing, control of decentralized organization. Responsible for raw materials including packaging, chemicals, resins, paints, plasticizers, etc. Market studies, E.O.Q. & value analysis most active daily experience. Three years responsible for nonferrous metal, cotton sheeting, rubber-crude, synthetic & molded parts.  
**Education:** BS-1951—MBA-1954 management and economics.  
**Prefer:** N. Y. City—Long Island.  
**Write:** Box 188

**Experience:** Four years direct purchasing raw materials and components for one of the largest electronic mfrs. 15 years administration of production control, inventory control, customer service, raw material sales to O.E.M. of electronics, electrical, automotive equipment.  
**Education:** Two years university training: mathematics, physics, chemistry, economics, English. Many years on the job training in manufacturing.  
**Will relocate.**  
**Write:** Box 189

**Experience:** Purchasing agent for 6 years at large aluminum extrusion and forging plant located in midwest. Supervised purchasing and central stores. Handled the purchase of aluminum, steel, lubricants, refractories and special equipment.  
**Education:** B.S. degree—1948 Western Michigan University.  
**Will relocate.**  
**Write:** Box 190

**Experience:** Ten years purchasing & engineering experience. Presently asst. p. a. in 70-maa dept. electronics co. Utilize modern cost reduction tools such as value analysis, learning curves. Understand E.O.Q. concepts, I.B.M. purchasing procedures. Heavy experience technical components of high cost & contract administration during R. & D. aircraft industry.  
**Education:** B.S. eng. degree.  
**Will relocate.** East coast preferred.  
**Write:** Box 191

**Experience:** Five years industrial, military & institutional buying. Familiar with vendor survey, relations, statistical quality control. Now handling one million in volume. All types items—turned, cast, molded, stamped etc. Complete responsibility for items bought.  
**Education:** B.S. Age 28. Good health. Willing to do limited travel. Resume on request.  
**Will relocate.**  
**Write:** Box 192

## HOW TO APPLY

Listings in this department are offered without charge. Both purchasing department personnel interested in changing jobs and employers in search of replacement or additions to their departments may take advantage of this service. When writing, specify whether you want the applicant's form or the employer's form. Address all correspondence—whether for forms, or in answer to an employment advertisement, to: Box No., Employment Service Department, Purchasing Magazine, 205 East 42nd Street, New York 17, New York.

**Experience:** 15 yrs. with major electronics, aircraft & missile manufacturers, as buyer, purch. agent & asst. manager. Eight yrs. with heavy equipment & aircraft as installation, specification & liaison engineer. Heavy on value analysis, systems & procedures. Active in national and local N.A.P.A. & other organizations. Management caliber with drive. Diversified in all areas. Currently responsible for 19 million buy.  
**Education:** Preparatory School & College. M. E. '35 plus three one-year company training courses & other courses in electronics, machine design, metallurgy, geology and management. Resume on request.  
**Will relocate.** Prefer New England but might be interested elsewhere.  
**Write:** Box 193

**Experience:** Nine years diversified experience in the purchasing field for centralized dept. servicing ten regions in the U.S. & Canada. Experienced in procurement of small tools & hardware, hollow metal, finished hardware, office supplies and equipment, warehouse crating and packaging material. Responsible for inventory control, value analysis, economic procurement and standardization.  
**Education:** B.S. Psychology Columbia Univ.—purchasing & storage N.Y.U.—electrician school U.S. Navy—book-keeping major in High School.  
**Write:** Box 194

**Experience:** Eight years in all phases of purchasing. Dir of purchases 4½ yrs. Well versed in prod., research & development procurement. Background in steel, casting, metal fabricating, refrigeration, electrical, mill supplies, & all types of industrial plant purchasing. Also material & inventory control mgr.  
**Education:** 3½ yrs. technical & industrial management courses.  
**Will relocate.** Prefer Ark. or Midwest.  
**Write:** Box 195

**Experience:** 16 years purchasing experience—last 3 years in complete charge of 2 plant buying and inventory control. Buying experience mainly in production items: chemicals, grain and grain products, packing and shipping supplies. Basic knowledge of accounting, traffic, and hedging operations. Yearly volume in excess of 6 million dollars.  
**Education:** College night courses in accounting, statistics, and salesmanship.  
**Will relocate.**  
**Write:** Box 196



*Greater Corrosion Resistance*

*Longer Fatigue Life*

*Less Product Incrustation*



*new tests prove*

## CONTOUR-WELDED\* STAINLESS TUBING *provides all three!*

A recent series of tests prove TRENTWELD® tubing, made by the exclusive *Contour-Weld* process, is smoother than any other full-finished tubing. And still other tests show this extra smoothness ensures longer fatigue life, greater resistance to corrosion and less product incrustation.

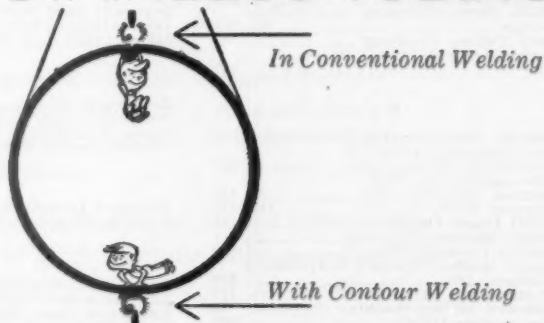
But here's why *Contour-welded* tubing is smoother inside:

First, it's smoother than seamless because it's formed from uniformly rolled strip steel, whereas seamless must be extruded or pierced.

And second, it's smoother than other welded tubing because the Trent-patented *Contour-Weld* process virtually eliminates the weld bead.

But why not get full details on *Contour welded* tubing's superiority? Send for the free 48-page "Trent Weld Manual." It's chock-full of details on *Contour-welded* tubing in sizes from 1/8" to 40" — in stainless and high alloy steels, titanium, zirconium, zircaloy and Hastelloy†. Write: Trent Tube Company, Box 2518, Pittsburgh, Pa.

†Trademark Haynes Stellite Co.



In CONVENTIONAL WELDING of tubes, gravity pulls molten metal down to form a bead that is difficult to remove by cold working. And cold working may lead to undercuts, focal points for fatigue cracks and corrosive attacks. Cleaning becomes difficult.

\* With CONTOUR WELDING the tube is welded at the bottom. Gravity still pulls the molten metal down inside the tube, but now the weld area corresponds to the contour of the tube. There's virtually no weld bulge on the inside surface. And even on the O.D., the weld seam more closely conforms to the contour of the tubing.



*stainless and high alloy pipe and tubing*  
**TRENT TUBE COMPANY**

Subsidiary of Crucible Steel Company of America • GENERAL OFFICES: East Troy, Wisc. • MILLS: East Troy, Wisc.; Fullerton, Calif.



# Advertisers In This Issue

<b>A</b>	
Alan Wood Steel Co., Penco Division	16
Albertson & Company, Inc.	217, 218
Allegheny Ludlum Steel Corp.	30
Allen Mfg. Co.	270
Allis Chalmers Mfg. Co.	159
Allmetal Screw Products Co., Inc.	172
Alloy Casting Institute	180
Alloy Steel Products Co., Inc.	253
Aluminum Company of America	114, 115, 156, 279
American Brass Co., The	173
American Chain & Cable Co., American Chain Division	127
American Hard Rubber Co., Division of Amerace Corp.	25
American Hardware Corp. — Corbin Cabinet Lock Div.	281
Ames Co., B. C.	256
Ampco Metal, Inc.	230
Anacanda Aluminum Company — Mill Products	291
Anacanda Copper Mining Co. & Subsid. Cos.	173
Ansul Chemical Co.	28
Arcos Corp.	136
Armstrong-Blum Manufacturing Company	260
Associated Spring Corp.	51
Athenia Steel Co.	123, 124, 125, 126
Avon Gear and Engineering Co.	240

<b>B</b>	
Baldor Electric Company (Elec. Motor Div.)	142
Barnes Co., Wallace	51
Barnes Co. Ltd., Wallace, The	51
Barnes-Gibson-Raymond	51
Bassick Co., The	292
Bay State Abrasive Products Co.	170, 171
Bay West Paper Co.	230
Bearings Co. of America	
Div. of Federal Mogul Bower Bearings, Inc.	151
Bearings, Inc.	225
Behr-Manning Co.	127
Bethlehem Steel Co.	222
Binks Mfg. Co.	118
Bliss & Laughlin, Inc.	179
Bound Roller Oil-Less Bearing Co.	215
Bower Rotor Bearings	
Division Federal-Mogul Bower Bearings, Inc.	149
Bristol Brass	278
Buffalo Forge Company and Buffalo Pumps	167
Bundy Tubing Company	64
Bunting Brass & Bronze Company, The	157

<b>C</b>	
Capewell Manufacturing Co., The	58
Capitol Manufacturing Co.	
Division of Harsco Corp.	229
Carborundum Co., The	
Bonded Abrasives Div.	129
Carpenter Steel Co., The	140, 141
Central Paper Company	38
Century Electric Company	1
Chandler Products Corp.	216
Chicago Molded Products Corporation	
Campco, Div.	260
Chrysler Corp., Amplex Div.	176, 177
Cincinnati Milling Machine Co.	45
Cities Service Oil Co.	221
Clark Equipment Co., Industrial Truck Div.	135
Cleveland Container Co., The	252
Clopak, Inc.	245
Colorado Fuel & Iron Corp.	
Combination Products	160, 161
Conover-Mast Purchasing Directory	192
Container Corporation of America	43
Continental Diamond Fibre, Div. of the Budd Co., Inc.	246
Copperweld Steel Co., Ohio Seamless Tube Division	10, 16
Cordley & Hayes Corp.	134
Crown Zellerbach	275
Crucible Steel Company	212, 213, 287

<b>D</b>	
Dana Corp.	66
Devcon Corporation	130
Diamond Chain Co., Inc.	244
Dixie Bearings, Inc.	225
Dow Chemical Co., The	116, 117
Dow Corning Corporation	251
Dunbar Bros. Co.	51
DuPont de Nemours & Co., Inc.	
E. I.	33, 239

<b>E</b>	
Eastman Kodak Company	191
Eastman Manufacturing Company	228
Eaton Manufacturing Company	
Dynamatic Division	211
Reliance Division	121
Emerson Electric of St. Louis	148
Ever Ready Label Corp.	184
Eversharp Pen Co., Division of the Parker Pen Co.	189
Exide Industrial Div., The Electric Storage Battery Co.	168

<b>F</b>	
Federal-Mogul Division Federal-Mogul-Bower Bearings, Inc.	147
Fischer Special Mfg. Co.	146
Fiske Brothers Refining Co., Lubriplate Div.	65
Forest City Foundries	290
Ft. Howard Paper Co.	2
Foster Company, L. B.	31
Fuller Company	109

<b>G</b>	
Gates Rubber Company	18
Gaylord Container Corporation Div. of Crown Zellerbach Corp.	131
General Electric Company	
Apparatus Sales Division	34, 35, 36
Metallurgical Prod. Dept.	51, 55
General Fireproofing Company	195
Gering Plastics, Inc. Div. of Studebaker-Packard Corp.	268
Gibson Co., William D., The	51
Graphic Controls Corporation	50
Graybar Electric Co., Inc.	4
Grinnell Company, Inc.	178
Gulf Oil Corporation	154, 155

<b>H</b>	
Hamilton Foundry, Inc.	280
Hardinge Brothers, Inc.	23
Heller Tool Co.	119
Hoover Ball & Bearing Company	273
Houghton & Co., E. F.	60, 61
Hyatt Bearing Div. General Motors Corp.	207

<b>I</b>	
Ingersoll Rand Company	223
International Packings Corporation	262
Island Creek Coal Sales Company, The	20

<b>J</b>	
Jenkins Bros.	4th Cover
Johns Manville, Dutch Brand Division	24
Jones & Laughlin Steel Corporation, Stainless and Strip Division	144, 145

<b>K</b>	
Keystone Carbon Co.	169
Klein & Sons, Mathias	184

<b>L</b>	
Lamb Electric Company, The	264
Lamson & Sessions Co., The	6
Lancaster Glass Corp., Div. of Lewis-Shepard Products, Inc.	224
Lubriplate Division, Fiske Brothers Refining Co.	65
Ludlow Papers, Inc.	276
Lunkenhimer Company	39

<b>M</b>	
MacLean-Fogg Lock Nut Company	234
Malleable Castings Council	226, 227
Manning, Maxwell & Moore, Inc.	62
Marsh Instrument Co. Div. of Colorado Oil & Gas Corp.	236
McLouth Steel Corporation	199
Meehanite Metal Corporation	259
Midwest Piping Co., Inc.	22
Miller Company, Rolling Mill Div.	150
Minnesota Mining & Mfg. Co.	165
Mirro Aluminum Company	231
Moore Business Forms	190

<b>N</b>	
Nagel-Chase Manufacturing Company, The	274
National Carbon Company—Division of Union Carbide Corp.	265
National Cash Register Co., The	193

National Screw & Mfg. Co.	269
National-Standard Company	123, 124, 125, 126
Newark Wire Cloth Company	59
Norton Co.	137

<b>O</b>	
Oakite Products, Inc.	183
Ohio Brass Company, Valve Division	241
Ohio Div., Associated Spring Corp.	51
Ohio Rubber Company	37
Ohio Seamless Tube Div., of Copperweld Steel Co.	26
Olin Mathieson Chemical Corporation Chemical Division	120
Western Brass	8
Orange Roller Bearing Co., Inc.	236

<b>P</b>	
Packaging Corporation of America	63
Park Drop Forge Co.	289
Penco Division, Alan Wood Steel Company	16
Perfection Gear Co., American Stock Gear Div.	220
Perrygraf Corporation	276
Pioneer Rubber Company, Industrial Division	219
Polymer Corp. of Penn., The	200
Potter & Brumfield, Division of American Machine & Foundry Co.	175
Precision Castings Company	48, 49
Proto Tool Co.	174
Purchasing Magazine	188

<b>R</b>	
Radio Corporation of America, Electron Tube Div.	242
Railway Express Agency, Inc.	12
Raymond Mfg. Co.	51
Reliance Electric & Engineering Co.	152, 153
Remington Rand Division of Sperry Rand Corporation	187
Republic Rubber Div.	128
Republic Steel Corporation	254, 275
Reynolds Metals Company	185
Reynolds Wire Co.	123, 124, 125, 126
Riverside Alloy Metal Div.	
H. K. Porter Co., Inc.	128
Roadway Express, Inc.	282
Roberts Co., C. A.	260
Rockwell Mfg. Co., Measurement & Control Div.	40, 41
Roebbling's Sons Co., John A., Wire Rope	257
Roll Formed Products Co.	233
Rome Cable Corporation	208, 209
R-P & C Valve Division American Chain & Cable	271
Russell, Burdall & Ward Bolt & Nut Company	277
Ryerson & Son, Inc., Joseph T.	68

<b>S</b>	
St. Regis Paper Co., Container Division	266, 267
Scovill Manufacturing Company—Mill Product	163, 164
Screw & Bolt Corp. of America	29
Shell Oil Company	2nd Cover
Simonds Abrasive Company	47
Skl Corporation	233
Skinner Electric Valve	256
Smith Corporation, A. O., Harvestore Division	3
Snap-on-Tools Corp.	162
Spaulding Fibre Co., Inc.	52
Square D. Company	3rd Cover
Stackpole Carbon Co., Ceramagnet Division	138
Standard Oil Company	139
Standard Pressed Steel Company	243, 250
Steiner Company	261
Sterling Electric Motors, Inc.	214
Superior Steel Division, Copperweld Steel Company	247
Superior Tube Co.	238
Synthane Corp.	235

<b>T</b>	
Taylor Co., The Halsey W.	122
Thermold Division, H. K. Porter Co., Inc.	46
Thor Power Tool Co.	232
Tinnerman Products, Inc.	32
Towmotor Corp.	201
Trent Tube Company	287
Truscon Laboratories	237

(Please turn to page 290)

PURCHASING





**you get  
planned high  
quality closed  
die forgings...  
in 5 pounds  
or 5000**

The forging dies you see here are used to produce compressor connecting rods weighing 1250 lbs. The plaster cast shown is for verifying dimensional accuracy.

Size is not a factor. Park's consistent high quality and competitive price stem not only from facilities . . . but *techniques*.

Park's answer to your questions could settle your problem once and for all. Call us . . . and we'll be glad to talk them over.

2034-PD

**the  
ark  
drop  
orge  
co.**

777 East 79th St., Cleveland 3, Ohio



For More Information Write No. 355 on Place Mark Card—Page 32



## Advertisers In This Issue

<b>U</b>	
Udylite Corporation .....	56
Unitech Products, Inc. ....	274
U. S. Industrial Chemicals Co., Div. of National Distillers & Chemical Corporation .....	158
United States Rubber Company .....	53
U. S. Steel Supply Div. of United States Steel .....	284, 285
<b>V</b>	
Vascoloy-Ramet Corporation .....	272
Vogt Machine Co., Henry .....	14
<b>W</b>	
Wagner Electric Corp. ....	258
Wagner Litho Machinery Co. 123, 124, 125, 126	
Waldes Kohinoor, Inc. ....	143
Wales Strippitt Co. ....	42
Wall Tube and Metal Products Co. ....	134
Ward Leonard Electric Co. ....	268
Weirton Steel Company .....	263
Westinghouse Electric Corp. Apparatus Div. ....	132, 133, 204, 205
West Virginia Pulp & Paper Co. ....	113
Whitman & Barnes Div. United Greenfield Corp. ....	181, 182
Williams & Co., J. H. ....	249
Wolverine Tube .....	203
Worcester Wire Works ....	123, 124, 125, 126
<b>Y</b>	
Yale & Towne Mfg. Co. ....	110, 111
Yale Plastics Co. ....	281

## Purchasing

205 East 42nd Street, New York 17, N.Y.  
Murray Hill 9-3250

Ray Richards .... Vice President & Publisher  
Alex G. Graam .... Assistant Publisher  
Joseph T. McCourt .... Sales Manager  
Hugh Robinson .... Eastern Regional Mgr.  
Jack Morris .... District Mgr., New York  
Thomas F. Hannon .... Mid-west Regional Mgr.  
Ed Crilly .... District Mgr., Chicago  
C. D. Francisco .... Chicago  
C. R. Kingsley .... Western Regional Mgr.  
Los Angeles

Ellsworth Brown  
Central Regional Mgr., Pittsburgh  
Robert Hawley .... District Mgr., Cleveland  
Jack T. Steelman .... District Mgr., Detroit  
Wayne Slockbower .... Promotion Manager  
Roy Hubbard .... Mgr. Circulation Service  
Irene Kreidler .... Mgr. Advertising Service  
Lucy D'Elia .... Advertising Production

### BRANCH OFFICES

737 North Michigan Avenue ... Chicago 11, Ill.  
3101 Euclid Avenue ... Cleveland 15, Ohio  
864 So. Robertson Blvd. ... Los Angeles 35, Calif.  
868 National Press Building Washington 4, D.C.  
13712 Puritan Avenue ... Detroit 27, Mich.  
601 Grant Street ... Pittsburgh, Pa.

Published by  
CONOVER-MAST PUBLICATIONS, INC.

B. P. Mast, Sr. .... Chairman of the Board  
B. P. Mast, Jr. .... President  
Ray Richards .... Vice President  
A. M. Morse, Jr. .... Vice President  
A. H. Dix .... Vice President, Research  
Harvey Conover, Jr. .... Vice President & Secretary  
Leo Haggerty .... Treasurer  
John T. Dix .... Director of Mid-West Operations  
L. E. McMahon .... Production Manager  
Daniel G. Smith .... Circulation Manager



Conover-Mast Publications  
Purchasing  
Mill & Factory • Space/Aeronautics  
Construction Equipment  
Electrical Manufacturing  
Volume Feeding Management  
Business/Commercial Aviation  
The Boating Industry  
Conover-Mast Purchasing Directory

For More Information about ad on facing page  
Write No. 357 on Place Mark Card—pg. 32→

PURCHASING

# SERVING INDUSTRY'S GRAY IRON CASTING REQUIREMENTS FOR OVER THREE DECADES

THE FOREST CITY  
FOUNDRIES COMPANY  
2500 WEST 27TH STREET  
CLEVELAND 13, OHIO

For More Information Write No. 356 on Place Mark Card—Page 32



Aluminum being extruded on one of the presses  
at our Terre Haute, Indiana, plant. For informa-  
tion about all our facilities and products, write for  
booklet, "Anaconda Aluminum Mill Products".

**ANACONDA<sup>®</sup>**: *a respected name, and  
now a vigorous force in aluminum extrusions*

*When buying aluminum for your product...*

PIG • INGOT • SHEET • PLATE • TUBE  
• PIPE • ROD • BAR • EXTRUSIONS •  
PLAIN AND LAMINATED FOIL

*check with...*



ANACONDA ALUMINUM COMPANY • GENERAL OFFICES, LOUISVILLE 1, KENTUCKY



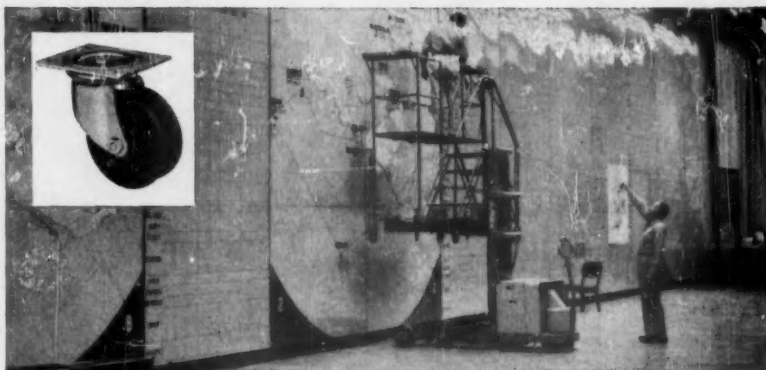
# MATERIALS-HANDLING NEWS

NEW AND UNUSUAL APPLICATIONS OF BASSICK CASTERS THAT MIGHT BE ADAPTED TO YOUR HANDLING PROBLEMS

## THIS CASTER GUIDES FLOATING ROOF OF OIL STORAGE TANK



Constant movement plus submersion in oil doesn't bother these Bassick casters and wheels. They're used on the roof of 67,000 barrel tank at the Tidewater Oil Tank Storage Farm in San Pedro, California. There's another Bassick wheel *inside* the tank mounted on pontoons that float to the top when the tank is full and help center the floating roof. This is typical of the way Bassick quality wheels and casters solve problems saving time, money and work.



## The Strategic Air Command Where Fighting Facts Move on Bassick Casters!

At the Strategic Air Command's \$10,000,000 Control Center, giant map panels (8 ft. x 20 ft.) roll quickly and smoothly on Bassick Grooved Wheel Casters. Weather information, operational facts, plans, all the vital information needed to direct global forces in peace or war goes *where* it's wanted...

*when* it's wanted. Bassick grooved wheel casters and angle iron track offer a basic, unique, inexpensive and flexible means of moving engines, tools, parts and finished products at low cost. Simple means of movement through assembly lines or into and out of warehouse.

## KING COTTON FLOATS TO MARKET ON BASSICK CASTERS

For 10 years, the Joanna Mills in South Carolina have moved giant 700 pound bales of cotton around like so many empty cardboard boxes. The real work is done by 33 dollies equipped with Bassick Floating Hub Casters. They have increased speed of movement by 35% and absorb the shock when bales slide down chute to waiting dollies. Saves time and makes work easier for employees.



## STORES AND WAREHOUSES SAVE TIME AND MONEY WITH THIS CASTER



These Bassick Diamond Arrow Casters feature the highest quality steel and unique, two-level ball race for easiest swiveling. Economical and versatile, they are ideal for light duty where load capacities range from 100 to 250 lbs. They give quiet, easy action to light-duty trucks, service trucks, dollies and similar equipment. Attachments such as special stems, wide wheels and side brakes make this series particularly adaptable for many different uses.

O.31

**SEALED  
BEARINGS  
DEFY DIRT AND  
MOISTURE**



## Lubrication seals prevent dripping grease... avoids hazards

This is a beauty! Special lubrication seals on Bassick casters keep floors clean by eliminating the hazards of dripping grease. Seals are engineered to remain effective for the life of the caster. They can be easily flushed and new grease added without disassembly.

## Ask Your Distributor!

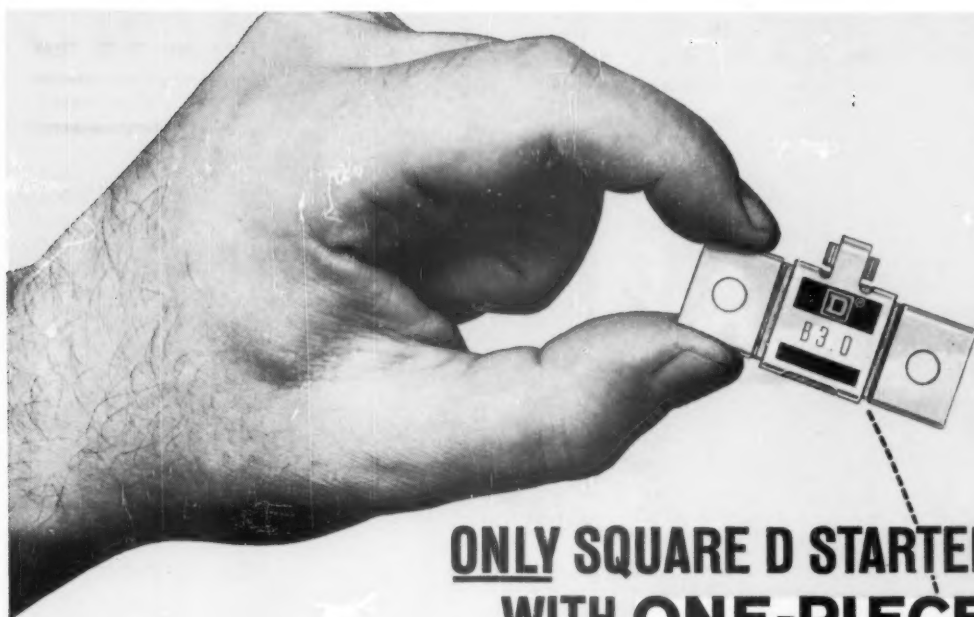
Local industrial distributors carry popular Bassick models in stock. They will be glad to recommend the most efficient caster to solve your materials handling problems.

THE  
BASSICK COMPANY  
BRIDGEPORT 5, CONN.  
IN CANADA:  
BELLEVILLE, ONT.



STEWART-WARNER CORPORATION





## ONLY SQUARE D STARTERS WITH ONE-PIECE OVERLOAD RELAYS GIVE *Absolute* PROTECTION!

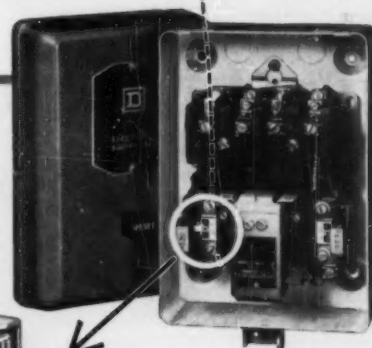
• Only Square D makes thermal overload relays with 1-piece construction—and only with 1-piece construction can you *know* you've installed the heater correctly. Square D 1-piece overload relays can be installed only one way. They are factory-assembled, individually tested and calibrated, completely tamper-proof. Repeated tripping will not affect accuracy.

You *pay* for overload protection—be sure you *get* it. Insist on Square D 1-piece overload relays for *absolute* protection.

**EXCLUSIVE—**  
1-piece Overload Relay  
for **ABSOLUTE** Protection!

Mail coupon  
today  
for simple  
"jig-saw"  
demonstrator  
—see why only  
Square D  
gives *absolute*  
protection

Heat-responsive element (solder pot) provides accurate response to overload, yet prevents nuisance tripping.



Heat-producing element is an integral part of overload unit. It's permanently joined to solder pot, can't become misaligned.



Square D Company  
Department 5A-218  
4041 North Richards Street  
Milwaukee 12, Wisconsin

Please send me information on Square D magnetic starters, along with your simple 3-minute "jig-saw" demonstrator

NAME \_\_\_\_\_  
COMPANY \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_



# SQUARE D COMPANY

wherever electricity is distributed and controlled

For More Information Write No. 152 on Place Mark Card—Page 32



# *Do you check these points* *When Buying* **STAINLESS STEEL Valves?**

- ☐ **How good are the castings?**
- ☐ **How precise is the machining?**
- ☐ **How rigid are the inspection and testing?**
- ☐ **How sound is the design?**

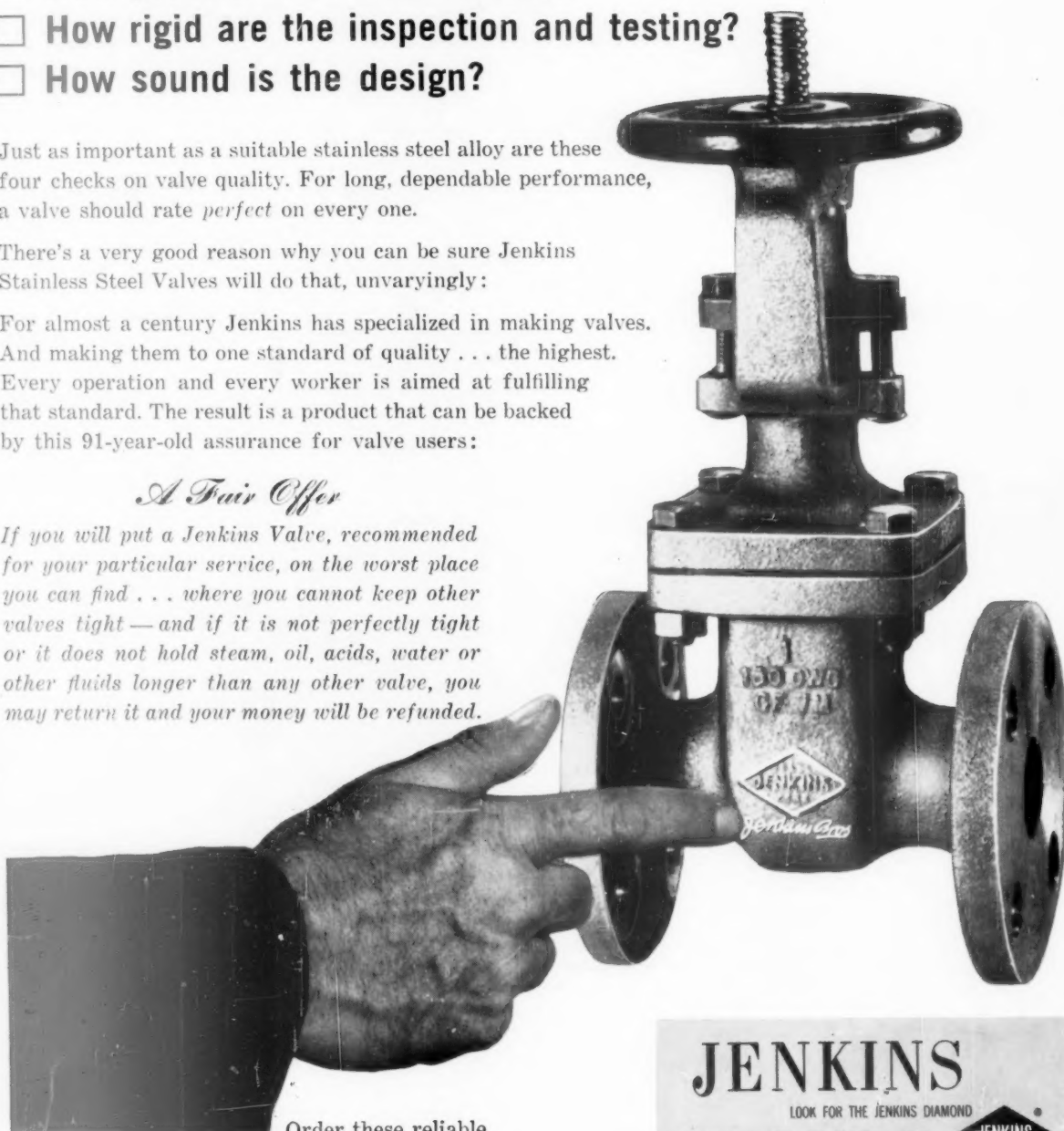
Just as important as a suitable stainless steel alloy are these four checks on valve quality. For long, dependable performance, a valve should rate *perfect* on every one.

There's a very good reason why you can be sure Jenkins Stainless Steel Valves will do that, unvaryingly:

For almost a century Jenkins has specialized in making valves. And making them to one standard of quality . . . the highest. Every operation and every worker is aimed at fulfilling that standard. The result is a product that can be backed by this 91-year-old assurance for valve users:

## *A Fair Offer*

*If you will put a Jenkins Valve, recommended for your particular service, on the worst place you can find . . . where you cannot keep other valves tight — and if it is not perfectly tight or it does not hold steam, oil, acids, water or other fluids longer than any other valve, you may return it and your money will be refunded.*



Order these reliable  
Jenkins Valves from your local  
Jenkins Distributor. Ask him or write  
us for Stainless Steel Catalog No. 59SS.  
Jenkins Bros., 100 Park Avenue,  
New York 17.

**JENKINS**  
LOOK FOR THE JENKINS DIAMOND  
**VALVES**



*Sold Through Leading Distributors Everywhere*



